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"That man is a benefactor to his race who makes two blades of grass grow where but one grew before."

SUPPLEMENTAL BULLETIN
OF THE
AMERICAN FERTILIZER
A MAGAZINE DEVOTED EXCLUSIVELY TO THE COMMERCIAL FERTILIZER INDUSTRY
AND ALL ITS ALLIED INDUSTRIES

Vol. XXXVIII PHILADELPHIA, FEB. 15, 1913 No. 3

The Fertilizer Materials Market

NEW YORK

A Fair Number of Orders for Small Lots of Material. Volume of Business Increasing. Increase in Consumption of Sulphate of Ammonia. Acid Phosphate Firm. Ocean Freight Rates on Nitrate of Soda Again Advance

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, February 13, 1913.

While the week just past broken by a holiday has been a rather quiet and routine one, a fair number of orders came to hand for small lots of various materials. The aggregate of these sales reaches sizable proportions and they appear to be gaining in volume slightly. There is no denying, however, the fact that business is much below the average of the season. Indications point to a rather lean year for the materials men, although there will undoubtedly be a heavy consumption of mixed fertilizer. This peculiar situation is, of course, due to the fact that enormous quantities of raw materials were carried over from last season, and it is only of late that the materials trade here has come to realize the vast quantities of basic products that have been held by mixers since last season. With a heavy consumption of bagged goods this year the trade will be purged, and with the gradual readjustment that is now taking place, the outlook appears bright for every branch of the industry.

Sulphate of Ammonia

According to the government import returns for the complete year the amount of foreign sulphate brought into this country in 1912 was 61,524 tons. This added to the domestic production of 165,000 tons brings the total American consumption up to 226,524 tons, as against 221,633 tons in 1911, an increase of 4,891 tons. As a matter of comparison the following figures showing the domestic con-

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sumption of ammonia reduced to its sulphate equivalent during the past five years is of interest:

1912	226,524 tons
1911	221,633 tons
1910	208,342 tons
1909	149,414 tons
1908	121,638 tons

The value of the sulphate imports in 1912 was $3,447,225; in 1911, $5,066,470; in 1910, $4,668,820. The value of nitrate of soda imports in 1912, 1911 and 1910 were respectively as follows: $16,658,404, $16,814,256 and $16,601,328.

The market during the week has been spotty. A good demand is reported for small lots at certain points with practically no inquiry from other points. This is probably due to the fact that cheap animal ammoniates are being used. Prices are quite firm, nearby positions commanding most attention at stiff quotations.

Pyrites

The government returns covering the calendar year show imports of pyrites to the amount of 964,478 tons, valued at $3,865,738, as against 1,001,944 tons, valued at $3,788,630 in 1911 and 806.590 tons, valued at $2,773,627 in 1910. It will be seen that while the tonnage imported in 1912 was smaller than in 1911, the value was greater coincident with higher prices realized on the ore.

Fish Scrap

Fish ammoniates of all kinds are scarce, and dealers here merely report a nominal market. Foreign material has been experiencing a rather good inquiry in the South, but supplies are small and prices firm.

Blood and Tankage

Business in small lots appears to be rather brisk, provided sellers are willing to grant concessions for these sales, but generally speaking the market for both blood and tankage is much below normal for this time of the season.

Meals

Mowrah meal is held at unchanged prices. Foreign castor meal is available for shipment. Neither article is attracting much attention.

Nitrate of Lime

Fertilizer manufacturers continue to experiment with nitrate of lime and the agents of the Norwegian producers appear to be well satisfied with the outlook for this product. No price changes have been announced during the interval.

Acid Phosphate

A normal condition of affairs appear to prevail in the acid phosphate market. The center of the industry is, of course, further South than here and advices received by local dealers indicate a quietly firm market with stocks moving along freely.

Calcium Cyanamid

Contracts for deliveries of granulated cyanamid in April and thereafter are being made, but all material up to that month has been contracted for. Powdered material in small quantities is available at 20 cents per unit of ammonia less than granulated.

Nitrate of Soda

The feature of the market has again been the advance in ocean freight rates, and charters were closed during the week at 38s 6d, with vessel owners now asking 40s. While this is not perhaps the highest rate that has ever prevailed in the history of the West Coast trade it is the highest rate that has ever prevailed during normal times. The advance in freights finds reflection in the nitrate market and quotations for immediate and nearby delivery are firm. For May and June shipment quotations are five points below those for spot, with July-December two and one-half points below May-June.

According to figures received here the production of nitrate in Chile in January was 20,000 tons in excess of January, 1912. The estimated January shipments to the United States were 57,710 tons, as against 25,160 tons in January, 1912. The deliveries in Europe in January were some 11,000 tons in excess of those of January last year.

As a matter of comparison the following privately compiled figures are of interest:

1912	Tons	
Production	2,555,200	2½*
Total shipments from West Coast	2,464,750	1¾*
World's consumption	2,485,860	7½*
European shipments from West Coast,	1,891,000	4*
European consumption	1,925,590	13*
United States consumption	446,000	8†

Bones

An Italian bark of 1,065 tons has been chartered to convey Argentine bones from Buenos Aires to New York or Philadelphia, probably the latter. Receipts of foreign material have been light, amounting to two small lots at

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* Per cent. increase on 1911.
† Per cent. decrease on 1911.

Baltimore from Liverpool and Hamburg. Bone prices are not particularly firm, but no change has been noted here during the interval.

COTTON SEED OIL AND MEAL

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, February 13, 1913.

A firm tone prevailed in the local cotton oil market until today, when, under the influence of an avalanche of selling orders, prices declined. The downward movement was attributed to heavy selling by provision houses, one of which is reported to have sold 10,000 barrels of pork. The provision houses have been decidedly bearish for some little time, as they apparently are of the opinion that a decline will eventually occur in view of the heavy production of seed. These people were heavy sellers of lard, and, as cotton oil is the next competitor, it naturally came in for today's attack.

The general opinion is that current operations are of a speculative nature. The consuming demand at the moment is small, and buyers of this nature have been taking moderate quantities off of the market without attracting any particular attention. Lard at Chicago has been subject to a decline during the week, and is hardly more than nominal today, with a weak undertone reported. Notwithstanding this decline, lard compound has been quoted at an unchanged figure throughout the interval, with the natural result that the consuming inquiry has declined; in fact, that commodity has been more or less neglected. It is difficult to ascertain just where the large refining interests stand, for they have been playing both sides of the market. One of the large refiners has been purchasing March oil, but reports state that the same interest has been selling abroad. Foreign buyers have been conspicuous by their absence. Sales for foreign accounts are about 100,000 barrels smaller than those of this time last year. Total exports for 1912 slightly exceeded 1,000,000 barrels, the largest in the history of the trade.

The crude oil situation at the moment is a peculiar one, and the crushers, with all their lack of intimate knowledge of what is going on here, have been in a position to name a price and maintain it. That is, they have maintained their prices up to today, but there is an opinion now current that if the market continues to decline under the influence of liberal selling the mills will have to meet buyers' views. Up to the present time buyers have been paying a stiff price, notwithstanding the fact that they know that enormous quantities of seed must be somewhere in the South available for crushing purposes. The mills have been, owing to this scarcity of seed, which planters appear to be holding back, in a position to keep oil prices firm. The crushers have disposed of large quantities of cake and meal this season for fertilizer and feeding purposes at good prices. They have not, therefore, been in a position where they were compelled to let go of oil at low prices in order to finance operations. Seed continues scarce, and the large refiners that have purchased seed to cover their sales of oil have been compelled to pay stiff prices. The oil ring here looks for a break in crude oil, but they, nevertheless, recognize the fact that a strong underlying situation prevails, and there is neither a decidedly bearish or bullish movement noted among the oil men themselves, although there is a bearish feeling among consumers.

GLUES

There is nothing special to report for the glue market. Conditions are quite routine, with most of the activity confined to withdrawals against outstanding contracts. Cabinet varieties have been meeting with a good request of late, and the general tone is better than it was a year or more ago. The glue manufacturers are now receiving more for their output than in 1912, and the recent advance has been easily maintained. There has been a marked decline in the imports of foreign glues, notwithstanding the activity of the Continental glue syndicate in this country.

MISCELLANEOUS PACKING HOUSE PRODUCTS

The hog market advanced during the early part of the week, but under the influence of heavy selling today a weakness developed. This downward movement was due to a like movement in the grain market. Hog packing during the quarter ending February 1st was 15 per cent. in volume less than a year ago. Lard has been irregular, with advances earlier in the week, while selling today caused a decline, with a weak market reported at the close. Oleostearine has been weak and unsteady. Lard compound and oleo oil nominal at unchanged values. Tallow slow and stationary. Greases moving against contracts in a routine way. In view of the cheapness of vegetable oils, packing house products for soap-making purposes have been in slow request. Linseed oil is available today at about 6½ cents; corn oil at 5.80 cents; soya bean oil at 5½ to 6 cents per pound.

BALTIMORE

A Fair Demand for Crude Materials. Volume of Southern Shipments Very Satisfactory. Ammoniates Not So Firm

Exclusive Correspondence to "The American Fertilizer."

BALTIMORE, February 12, 1913.

The fertilizer market locally continues without much change. There is a fair demand for crude materials at prices buyers deem attractive, but so far as present needs are concerned the buyers seem to be amply supplied. While it is too early to form any definite estimate of the extent of the business, the volume of the Southern shipments so far is satisfactory, and reports as to prevailing prices from that section are more cheerful than for some time past.

Animal Ammoniates.—The tone of the market seems to be not so firm in the past few days. The larger Western producers are doing their best to hold up prices, particularly on futures, but they have shown decidedly more interest in counter-bids for prompt and nearby shipment, and have come nearer to meeting buyers' views on such offers than for some time past. It seems to be the prevailing impression, among buyers at least, that the producers' attempt to hold up and advance prices for futures will not be successful, and that the heavy Southern demand expected by such producers will not materialize to the extent of forcing up prices. In our local market offerings from other than Western producers have a tendency to keep the market well supplied with ammoniates of various grades at possibly somewhat under the current prices of other localities, and for such as these the volume of business has been fair.

Acid Phosphate.—The market, so far as the volume of actual sales is concerned, is extremely quiet. There has been a material curtailment in the production in this market the past eighteen months, and, while producers are undoubtedly well supplied with stocks, there is in all probability less unsold surplus at the present time than there has been in this market for some time past. As the result of this state of affairs there has of late been a much stronger feeling of confidence exhibited by the local producers, and the general tone of the market has improved decidedly.

Nitrate of Soda.—The market continues firm. Contrary to previous expectations, there will be a February vessel, but the increased supply apparently makes no difference as far as the price is concerned. There is no heavy demand, although there would undoubtedly be better inquiry if the price were nearer to buyers' ideas.

Sulphate of Ammonia.—The market shows very little change; there has been a fair amount of activity locally in resales of spot material from second hands, which sales were consummated on the basis fully in line with import prices.

Bone Meal.—Prices continue unchanged, with demand extremely quiet.

Potash Salts.—There is the usual activity of deliveries arriving on regular contracts. In addition there are from time to time lots of various grades offered from second hands at prices varying as the necessities of the sellers vary; such resales, while not of large volume, are fairly continuous.

CINCINNATI

The Hand-to-Mouth Policy Still Prevails. Tankage is Slightly Weaker with Blood Stronger

Exclusive Correspondence to "The American Fertilizer."

CINCINNATI, February 11, 1913.

With few exceptions the market in all fertilizer materials is dull. The small tonnage orders coming in show that the hand-to-mouth policy is still in effect as it has been for some months past.

Tankage.—Little interest is being shown in this material, and in consequence the market is some weaker.

Blood.—Being bought in considerable quantities and a stronger market resulting, and prices have been worked up 2 to 5 cents per unit over last week's quotations.

Sulphate of Ammonia.—The market is quiet, with prices firm.

Nitrate of Soda.—Not receiving much attention, as prices are out of line with other ammoniates.

Acid Phosphate.—The market is a little stronger, but no large contracts are being closed.

Bone.—Little attention is being given this material, and sales being made are for small tonnage.

Cyanamid.—The granular material is not being offered for delivery prior to April, the production having been sold up to that time. The powdered form is active at figures slightly under the granular price.

ATLANTA

A Firm Tone of the Market and Brisk Inquiry Makes for Activity in the Trade.

Season a Little Late

Exclusive Correspondence to "The American Fertilizer."

ATLANTA, February 12, 1913.

The firm tone of the markets and the brisk inquiry the past week would indicate that buyers in the Atlanta territory are preparing for a good season. They got a late start, but the demand now bids fair to equal that of the average season. The weather conditions are still very detrimental to the fertilizer trade, but the season has hardly advanced far enough for this to discourage buying to any appreciable extent.

Blood and Tankage.—In the ammoniate market blood and tankage are enjoying a good demand, and a good many sales are being consummated for prompt and nearby shipments. However, the tone of the market has a slightly weakening tendency.

Cottonseed Meal.—The available supply of cottonseed meal is about exhausted, and this commodity is now very scarce and high. The short crop the past season, of course, resulted in the majority of the mills having to shut down unusually early.

Acid Phosphate has not excited any particular interest lately, and inquiries are scattering. Quite a number of the large acid makers have unlimited quantity of these goods to offer, but slow sale.

Fish Scrap has been in unusually good demand, though very little offering, and small lots offered at Atlantic ports have been taken off the market as fast as submitted to the trade.

Sulphate of Ammonia.—The domestic sulphate of ammonia manufacturers have advanced their ideas of price to about the same basis as the foreign offerings, but sales in this commodity have fallen off slightly.

Nitrate of Soda.—The demand for nitrate of soda has been good, despite its steady advance in price and the firm tone of the market. Indications are now that there will hardly be any weakening in this market for some time to come.

Potashes, particularly kainit and muriate, are in fair demand at the scale prices.

Cyanamid, a material that has been growing in popular favor very rapidly, has a good demand, and nice sales are reported.

Pyrites Ore continues to hold up both in demand and in price, and heavy sales are reported both for nearby and future shipments.

PHILADELPHIA

Business in All Lines of Materials Steady and of Normal Volume. Manufacturers Have Contracted for Spring Tankage

Exclusive Correspondence to "The American Fertilizer."

PHILADELPHIA, February 13, 1913.

The past week has experienced practically no change in quotations. We understand business in all lines of fertilizer materials is steady and of normal volume.

Tankage quotations continue on a basis which might be considered favorable to manufacturers in this section as against prices named by Western packers, but from what we can learn the trade hereabouts has already contracted for supplies that will be sufficient for the early shipping season.

Blood is quiet; sales have been limited at a shade lower than prices that were ruling earlier in the year.

Ground Bone has had further attention, without change of prices on the several grades, although we understand quotations on domestic steamed qualities are high; notwithstanding, we have heard of orders being placed for both domestic and foreign products.

Nitrate of Soda continues firm at the advance referred to in our last advice; very little new business has been accomplished, as the principal buyers in this market seem to have contracted early and are receiving goods off vessels to arrive this and next month for spring trade.

Sulphate of Ammonia is quiet; we are aware of no new demand. Delayed arrivals of foreign goods we understand are now being received from steamer just in port, and further near-due arrivals will put the local trade in good supply of this article for some little time to come.

Potash Salts are receiving attention only to the extent of receiving deliveries against contracts; we are informed declarations of large tonnage of several grades have been received on goods per steamers to arrive this month.

SAVANNAH

Nitrate of Soda Strong. Acid Phosphate Quiet. Ground Fish Scarce. Cottonseed Meal Advancing

Exclusive Correspondence to "The American Fertilizer."

SAVANNAH, February 12, 1913.

Nitrate of Soda.—The market is strong, and has advanced during the last two weeks 2½ cents per 100 pounds. Demand is good, and sales are being made at present prices both for spot and future delivery.

Acid Phosphate.—Demand quiet, with local dealers practically sold up.

Potash.—Fair demand, with advancing prices.

Ground Fish.—There is very little left. Demand is active, and many buyers are unable to secure their full requirements.

Cottonseed Meal.—Owing to the short crop in this section there is very little left that can be considered Savannah delivery on reasonable freight rate. Stock held here is in firm hands, with the market steady at advancing prices.

CHARLESTON

Nitrate of Soda Active. Sales of Blood and Tankage Good. Numerous Orders for Sulphate of Ammonia

Exclusive Correspondence to "The American Fertilizer."

CHARLESTON, February 12, 1913.

Nitrate of Soda.—Activity in the nitrate market continues. Large sales are reported at current prices. Indications are that the demand will continue to be good for some time.

Blood and Tankage.—These animal ammoniates have been somewhat easier during the past week compared with former offerings. Sales have been very good, and inquiries quite numerous.

Sulphate of Ammonia.—Reports indicate continued activity in this market, and orders are being booked rapidly.

Potash Salts.—The demand for potash salts continues to be active, and numerous sales are reported.

Acidulated Fish Scrap.—Fish scrap is extremely scarce, no domestic supply being reported on the market. Quite a number of foreign fish materials are offered here and in Savannah.

Cottonseed Meal.—Cottonseed meal has not been so much in demand recently, and quotations continue slightly lower than previously. However, the price is still high, and very little of it is being used for fertilizing purposes.

Acid Phosphate.—There is but little demand for acid phosphate. Offerings are plentiful, however, and the prices remain about as formerly.

Phosphate Rock.—At the present time phosphate rock is not much in demand, only a few sales here and there being reported.

NITRATE OF SODA

The Market Has Advanced. Production for January. Consumers Who Have Been Holding Off Now Buying

Exclusive Correspondence to "The American Fertilizer."

SAVANNAH, February 12, 1913.

The market has advanced since our last letter, and, in spite of this, an active demand has developed during the past week. There are only small stocks left at principal Southern ports. This includes Charleston, where the "Anglo Columbian" is now discharging. This cargo, however, is practically all sold under contract.

The production during January was 5,150,000 qtls. (22 qtls. = 1 ton), as against 4,714,000 qtls. January, 1912.

European visible supply on the 1st inst. was 1,058,000 tons, as aaginst 1,123,000 tons on February 1, 1912.

The rise in prices applies not only to nearby deliveries, but as far ahead as shipments covering all of 1914.

European prices have advanced rapidly, especially for this season's delivery, and it is evident that authorities there expect a most satisfactory season in all respects.

Consumers and dealers who were holding off on the Continent in hopes of seeing lower prices apparently now realize that there is no likelihood of a decline at least for their requirements during the next several months. A large majority delayed buying as long as possible, and the result has been a great many had to come into the market as buyers at practically the same time, with the result that prices have been raised almost daily.

FERTILIZER AGENCIES CO.

RESEARCHES IN THE SUPERPHOSPHATE INDUSTRY

(Translated from "Le Phosphate," Paris)

The French Academy of Science has awarded to M. Paul Adam the Montyou prize for researches into the processes of unhealthful industries. Among others the professor made a study of the superphosphate industry in Europe.

The superphosphate industry has been ranked, according to the rules, as twelfth in the class of unhealthful, dangerous or harmful industries; that is to say, it has been considered as void of very grave dangers to those engaged in it.

Having become interested in 1899 with some associates in the manufacture of superphosphate, especially of nitrogenized superphosphate, M. Adam's attention was drawn to some means for making more complete the condensation of vapors disengaged during the course of manufacture. The practical experiments undertaken by his advice in several factories demonstrated that condensation could be made more effective if among the vapors emitted during the mixing of raw phosphates with the sulphuric acid there was set going a spray of water, obtained by directing a water jet against some obstacle, properly placed, the jet being under a considerable pressure. A much better condensation of the obnoxious vapors resulted from the employment of this device of the water spray. Further, it produced a considerable economy when compared with other washing apparatus, in general not so efficient. This last particular is not without interest when considering the degree in which the device will be accepted by the industry.

M. Adam investigated another cause of unhealthfulness, particularly obnoxious to the workmen, which occurs during the processes of manufacture. During the combination in a closed vessel of the mixture of sulphuric acid and phosphate the quantity of gas that must be breathed is not voluminous, but is strongly charged with vapors. But after a period of repose, during which the reaction of the chemicals is effected, the cutting up of the now solid masses of superphosphate is done, and, the chambers being opened, the volume of gases to be breathed is much increased.

The acid emanations which the agitated mass allows to escape should be kept from the workmen by an efficient system of ventilation. The apparatus which gives effective results during the mixing becomes ineffectual during the cutting-up processes. With equal reason an air exhauster placed in the cutting-up pits and open to the atmosphere does not serve for the mixer in operation.

M. Adam advised a complete reform of the system of simultaneous ventilation (hitherto adopted), and the manufacturers accordingly modified their installations for the better. Special aspirators were established where the dampers, judiciously placed, permitted placing the apparatus in communication both with the mixer and with the cutting ditches in a manner to render the ventilation most efficacious. The advantages of these changes were immediately recognized both by the operators and the inhabitants of the neighborhood.

The superphosphate, newly broken up, continues to disengage acid vapors for a certain time, and M. Adam made still another modification, important from a hygienic point of view, in preventing the dissipation of these vapors into the atmosphere. The transporting apparatus, such as chain bucket and belt conveyers, etc., which often carry the superphosphate considerable distances, have been enclosed, preventing the escape of vapors into the atmosphere. All these measures, taken on the advice of M. Adam, have realized great benefits from the standpoint of health.

PERUVIAN GUANO EXPORTS

(Vice Consul Louis G. Dreyfus, Jr., Callao.)

Following is a summary of the exportation of guano from Peru to foreign countries during the year 1911 in metric tons and American currency:

Countries	Metric Tons	Value
Great Britain	36,535	$716,720,880
Belgium.	24,240	472,195,200
Germany.	6,700	130,516,000
France.	2,112	41,141,760
Total.	69,587	$1,360,573,840

WILL DO A FERTILIZER BUSINESS

The Forest City Company, Cleveland, Ohio, has been organized with a capital stock of $10,000, by A. R. Grigsby, H. W. Miller, George C. Hansen, S. C. Blake and V. L. Galinatt. The application for incorporation simply says "fertilizers."

SIX MIGHTY GOOD REASONS

The Jarecki Chemical Company, Cincinnati and Sandusky, Ohio, have issued a very neat little pamphlet, entitled "Six Mighty Good Reasons Why You Should Use Jarecki Fish and Bone Fertilizers." The booklet is attractively printed in two colors, and is devoted in particular to featuring the crop-producing value of the different brands of goods made by the Jarecki company.

FERTILIZERS IN RUSSIA IN 1912

Importations and Consumption Have Shown a Marked Increase. A Prosperous Year from All Viewpoints. Farmers Pleased with the Results

Exclusive Correspondence to "The American Fertilizer."

St. Petersburg, January 22, 1913.

Russian chemistry in the year 1912 has proved to be a really satisfactory business in all its branches. The report that has been issued giving returns down to end-October last year shows that at all events as far as importations go the consumption of chemicals has undergone a marked increase as compared with preceding years, and it is known from other authorities that the home manufacture in practically every branch has been very gratifying to all those interested in its success. The prosperity that has generally prevailed with the industry has extended to every part of the country where it is engaged in, from the Urals district where the pyrites are produced through the salt districts of Samara and Ekaterinoslav, etc., down to the coal district of Donetz basin and also in the Baltic provinces, where the chemical works use imported raw material so largely.

Probably in no branch of the industry has prosperity been more obvious than in the fertilizer branch, whether looked at from the manufacturer's or the importer's point of view; although it may be said here in parenthesis that the exportation of Russian fertilizers can hardly be said to exist unless it applies perhaps to a little bone and bone meal that finds its way to Germany, and to the rich phosphorites of Podolia that are so largely exported to Austria, which is just over the border.

Superphosphates

The item in fertilizers that most attracts attention in the returns is superphosphates, not so much on account of the manufacture thereof as the importation. The quantity of artificial fertilizers imported in the first ten months of the year under review is returned at 23,722,00 poods (a pood is equal to about 36 pounds) against 19,365,000 p. and 15,650,000 p. in the corresponding period of 1911 and 1910 respectively.

Basic Slag

Dividing this group into its leading constituent elements, we find that the most important in point of quantity is that of Thomas slag. The weight of this fertilizer imported in the period named in 1912 was 11,000,000 p. This is an advance of 2,000,000 p. over the corresponding movement in 1911. It will be remembered that notwithstanding the extensive iron works with which Russia is endowed, the nature of the ore does not lead to the production of Thomas slag; consequently, excepting the production of one or two furnaces, the whole quantity of Thomas slag consumed in the country has to be imported.

Phosphate Rock

The next item of importance in the list is that of phosphates which figures at 9,800,000 p. which compares with 8,200,000 p. in the first ten months of 1911. To this has to be added the importation of natural phosphorites, unground, amounting to 1,800,000 p. against 1,500,000 p. in 1911 and 1,000,000 p. in 1910. This gradual increase in the importation of unground natural phosphorites testifies to the growing productivity of the Russian superphosphate works, but is also a witness to the fact that notwithstanding the radius and the extent of Russia's deposits of phosphorites her superphosphate factories are not equal to keeping the country supplied with the finished article. Therefore the importation thereof grows and grows at a greater rate than the increase in the home production, which is itself substantial. According to information gathered from various sources it would appear that in Russia last year there was a great increase in the production of superphosphates, which had been stimulated so far by the success of previous years' operations that two new factories had been erected and started to work. This product has enjoyed great acceptance amongst the Russian agriculturists, and the demand has been a good one; but all the same, although the cost of raw material and fuel has risen, the prices for 1911 may be said to have ruled over the year 1912.

Nitrate of Soda and Potash

Two items respecting which Russia is entirely dependent on foreign supplies are nitrate of soda and German potash. Regarding the former the custom house returns show a continuous increase in the imports. The figure for 1912, first ten months, was 2,921,000 p., which compares with 1,825,000 p. in 1911 and 1,602,000 p. in 1910. This quantity goes for the most part on the fields; but it is impossible to give with any accuracy what the proportion is. Large quantities are used for various other chemical purposes. Reflecting the German potash salts there is a remarkable increase in the importation thereof. The quantity imported in the first ten months of 1912 made 4,876,000 p. against 3,620,000 p.

and 2,610,000 p. in the corresponding period of the two respective preceding years. In order to arrive at an estimate of the increase in the importations of fertilizers last year one is obliged either to define arbitrarily the quantity that went into the chemical factories, or to assume that all of it was used for agriculture. On the latter assumption the increase in the imports last year over the preceding one would be about 25 per cent.

Norwegian Saltpeter

An article that has found some acceptance amongst Russian agriculturists is that known as Norwegian saltpeter, which has been readily taken up wherever offered on the Russian market, so quickly indeed that no stocks whatever remain of it. In point of price it keeps company fairly well with the course of the Chile saltpeter market. The difficulties in establishing chemical industries where the raw material therefor does not lie conveniently to hand has been felt probably by Russia, with its enormous agricultural demand, more than by any other country. The rich phosphorites in the country lie in the Southwest, the pyrites lie in the Northeast, and to bring these two together is a very expensive operation. The consequence is that tor the Podolian phosphates sulphuric acid has to be imported whilst, on the other hand, somewhat extensive deposits of phosphorites in the East and Northeast are poor in content, and only careful chemical treatment can work them up at a profit, if at all; although the pyrites lie within reasonable distance. However, failing private initiative, the Perm district council has decided on the erection of a superphosphate factory for the use of the district within a considerable radius of the factory itself, and it is hoped that such an institution will serve not only the economic needs of the community, but as a model to private industrialists who may be disposed to embark on such an enterprise as a fertilizer works.

Sulphate of Ammonia

There does not appear to have been very satisfactory progress in the South with sulphate of ammonia. This product, because of its high price, appears to frighten the farmer all conscious though he should be of its fertilizing value. The large number of coking ovens now constructed in the Donetz basin and equipped with recovery apparatus for secondary products must be producing large quantities of ammonia, for which it will be difficult to find a market unless the Russian farmer can learn that he is money in pocket by being at the initial expense of buying sulphate of ammonia.

On the whole then the Russian fertilizer year has been a prosperous one from all points of view. The importing merchant has found a ready sale for the foreign product, and the manufacturer has had no difficulty in disposing of the home-made goods. The farmer is obviously well pleased with his previous experience in fertilizers, else we could hardly expect the demand to be expanding as is obvious from the various returns on which the foregoing report is based.

FISH SCRAP ON THE PACIFIC COAST

The annual statistical number of The Pacific Fisherman, Seattle, Wash., is just out in an unusually attractive form, and contains valuable data and information regarding the fishing industry of the Pacific coast.

In regard to fish scrap and oil it states that the production along the Pacific coast during 1912 was considerably lower than previous years, the largest contributing factor being an off year in the salmon run on Puget Sound. In 1912 there were twelve fertilizer and oil plants in operation in Alaska, Puget Sound, British Columbia and the coast districts, which produced a total of about 2,221 tons of fish scrap, valued at $77,735. These same plants produced more than 465,000 gallons of fish oil, valued at $218,000.

WILL MINE NEW ZEALAND SULPHUR

A syndicate of Australian, Canadian and English capitalists have acquired possession of White Island, situated in the Bay of Plenty, New Zealand, with the object of exploiting its deposits of sulphur.

This island represents the highest parts of an ancient volcano, which ages ago rose up out of the sea. At various times, attempts have been made to work its sulphur deposits, but without much success. The new company evidently intends to realize results and will import the equipment necessary for the undertaking. The amount of sulphur in the deposit is estimated at about 750,000 tons.

PHOSPHATE DEVELOPMENTS IN EGYPT

The Banco di Roma has formed a new company, under the name of Società Egiziana per l'Estrazione ed il Commercio dei Fosfati, of Alexandria, Egypt, capital $300,000. The object of this new concern is the acquisition and exportation of phosphate deposits and all other minerals in general, as well as the commercial operations attaching to this industry.

MANGANESE AS A FERTILIZER

By M. X. Sullivan and W. O. Robinson, Bureau of Soils, Washington, D. C.

A review of the literature shows that numerous fertilizer experiments have been made with manganese compounds in water culture, pot culture, and in the field. The salts of manganese employed have been the dioxide, carbonate, iodide, nitrate, chloride, and sulphate, in quantities varying from 9 to 5,340 pounds, but usually less than 100 pounds to the acre, especially of the more soluble salts. The results of the experiments have varied somewhat, but in a majority of the cases applications of not over 50 pounds of manganese salts to the acre have given increased yields of a variety of crops on widely different soils. The crops experimented with have been rice, peas, beans, vetch, oats, wheat, barley, corn, potatoes, sugar beets, carrots, mustard, cabbage, onions, radishes, apricots, tobacco and grass. Its action on rice and the leguminous crops seems to be more favorable than on corn, carrots, sugar beets, barley, potatoes and tobacco. In many cases the increase has been very appreciable; upward of 25 and 30 per cent. In a number of instances no increase has been obtained. Large applications of manganese salts—that is, more than 75 or 100 pounds to the acre—have in general been found injurious.

It should be borne in mind that in all cases but one the experiments referred to have been made abroad. At the Arizona Experiment Station, however, it was found that manganese chloride stimulated the formation of potato tubers. Considerable work has been done in this bureau on the fertilizing value of manganese salts. The detailed results of this work will be published in the near future.

Experiments on the after effects of manganese as a fertilizer are too few to warrant any definite conclusion. Some Japanese work, however, indicates that the ultimate after effect is not favorable.

The stimulating effect of manganese on plant growth is due most probably to its oxidizing activity and its influence on the oxidizing power of plants, microorganisms, and soil. In connection with plants manganese has been shown, through work in this bureau, to be the most active element in promoting oxidation changes brought about by the oxidizing enzymes. It has been found, too, that in general the power of soils to oxidize easily oxidizable substances, a power which is greater in fertile soils than in infertile soils, and in surface soils than in subsoils, is correlated with the manganese content and the nature of the organic matter. In this connection it is interesting to note that in a chemical examination of a number of soils and subsoils the manganese was found concentrated in the surface soil. In addition to furthering the necessary oxidation changes in plant and soil, it has been found by a number of investigators that manganese stimulates the growth of microorganisms, modifying their number and functions with a consequent modification of biochemical activities. As a result there is a change in both the quantity and the condition of various soil constituents. Further, it has been found that manganese added to the soil increases the absorption of other ingredients by the plant, particularly lime and magnesia.

Manganese is widely distributed in the soil. Of 26 American soils that have recently been carefully analyzed by one of the authors, all contain manganese (MnO) in proportions ranging from 0.01 to 0.51 per cent. The average content in these soils is 0.20 per cent., or about 8,000 pounds in the acre-foot. This amount compares favorably with that of phosphoric acid, though the quantity of phosphoric acid assimilated by the plant is very much greater.

In several soils, in Hawaii and in New South Wales in Australia, the natural manganese content is so high that it has been found injurious to pineapples and grass, respectively.

Manganese is present in the soil in at least two forms; one of the undecomposed silicate compounds, and the other manganese dioxide (MnO_2).

Of the various compounds of manganese, the dioxide seems to be the least effective, perhaps because the manganese is already present in the soil in this form. The sulphate has received the most attention and has given the best results. Less work has been done with the chloride, but in common with the sulphate, in small amounts, it has produced increased yields. In large amounts both have been more toxic than the dioxide or carbonate. In a number of cases, even in very large amounts, the carbonate has given beneficial rather than injurious results.

In this country little work has been done on the value of manganese as an accessory fertilizer. Before any recommendation can be made as to its value in general farm practice, pot and field experiments must be made with a variety of crops on widely varying soils and under different climatic conditions.

Manganese for fertilizer purposes should not be expensive, since manganese sulphate, according to the English quotations, can be bought for about $75 a ton.

The application of manganese salts, of which the sulphate seems to be the most effective, should not exceed 100 pounds to the acre, and probably better results would be obtained from smaller quantities. Such small amounts can not be applied effectively to the soil unless ground fine and intimately mixed with comparatively large amounts of some other material, such as commercial fertilizers or barnyard manures.

The soil is complex and the seat of vast chemical, physical, and biological actions which are varying and differently modified by the addition of fertilizer ingredients. In view of this complexity and the discrepancy that has been found in the use of manganese fertilizers, manganese can not now be recommended in any way other than in experimentation and as a fertilizer complementary to the usual chemical fertilizers, nitrate, phosphoric acid, potash, and lime.

GEORGIA SOIL SURVEY

The result of the soil survey in the State of Georgia, and a year's results from fertilizer tests on some six or eight different types of soils, was demonstrated at the fifth National Corn Exposition by the State of Georgia. This exhibit was prepared at the State College of Agriculture, Athens. These results were demonstrated by the influence of yield on cotton and corn, the number of years work on different varieties of corn, and the results of germination of corn as a guide to select the right kind of plants. The exhibit was very comprehensive and interesting.

AN ATTRACTIVE ALMANAC

The Montgomery, Ala., branch of the American Agricultural Chemical Company have recently issued their Farmers' Almanac for 1913, which contains much valuable information required daily by everyone, and also a history of the use of fertilizers. This chapter regarding the use of fertilizers is very instructive, particularly to those who are not as familiar with mixed fertilizers as they should be. The almanac also contains tables of weights, measures, the population of principal cities in the United States, the game and fish laws of Alabama, an abstract of the new parcel post law and other useful and instructive data. The cover represents a typical Southern scene—a darky of the cotton belt with his basket of cotton, and a cotton field in the background.

TECHNICAL REVIEWS

By THOMAS COULSON PINKERTON, A. B., B. S.

Composition, Occurrence, Uses and Production of Feldspar.—Mineral Resources of the U. S. for 1911. Geological Survey.

Feldspar is a compound of silica and one or more of the bases—potash, soda and lime. There are two principal commercial varieties, the potash spar and the soda spar. The theoretical composition of the pure potash spar is 16.9 per cent. potash. In 1911 deposits in California, Connecticut, Maine, Maryland, Minnesota, New York, North Carolina, Pennsylvania and Virginia were worked. The principal use of feldspar is in the manufacture of pottery, enamel ware and electrical ware. The United States production for 1911 was 92,700 tons, valued at $579,008.

Studies Concerning the Accumulation of Nitrogen in the Soil.—Chemical Abstracts, Jan. 10, 1913. Easton, Pa.

Experiments to determine the amount of nitrogen taken from the air by nitrogen-fixing bacteria in combination with various plant material. The plant materials used were oak and maple leaves, cornstalks, alfalfa, wheat straw, lupines, clover, etc. With lupines and clover the bacteria absorbed eight to twelve times as much nitrogen as they did with the leaves and three to four times as much as when grown with cornstalks. We may conclude from this that clover is a better crop to turn under than cornstalks, also that forest soil is not the favorable medium for the accumulation of nitrogen it is generally supposed to be. In another series of experiments it was shown that the micro-organisms absorbed ammonia salts (sulphate of ammonia) much more energetically than they did nitrates.

A Reliable Method for Determining the Citric Acid Soluble Phosphate in Thomas Slag.—Chemical Abstracts, Jan. 10, 1913. Easton, Pa.

Fifty c.c. of the citric acid extract are treated successively with 25 c.c. iron citrate solution, 10 c.c. of 0.3 per cent. H_2O_2 and 25 c.c. magnesia mixture, and allowed to stand for fifteen minutes. The precipitate is pure and white. Directions for making up the reagents are given.

PHOSPHATE ROCK IN TENNESSEE

Operators During 1911. Quantity and Value of Production. Sales and Prices. The Amount Exported

The twenty-first annual report of the Mining Department of Tennessee has just been issued by Geo. E. Sylvester, Chief Mine Inspector, Nashville, Tenn. It is a very complete book of 180 pages and covers most thoroughly the mineral resources of Tennessee. The chapter devoted to phosphate rock is as follows:

Phosphate deposits are found in the following counties in Tennessee: Giles, Hickman, Maury, Williamson, Sumner, Perry, Marshall, and Lewis. They are of three classes—brown residual phosphate, blue bedded phosphate, and white phosphate. The brown phosphate occurs as blanket deposits, and as collar deposits. The principal deposits are in the vicinity of Mount Pleasant, Tennessee. This brown rock carries as much as 80 per cent. tricalcium phosphate. The blue phosphate occurs in seams ranging from 1 to 50 inches in thickness, but the high-grade rock is rarely over 28 inches thick. The phosphate content ranges from 30 to 85 per cent. tricalcium phosphate.

The principal part of the phosphate mined in the state is the brown rock. This rock occurs as a blanket deposit or bed, with an overburden of earth or clay from 5 or 10 to 20 or more feet in thickness. It is mined entirely by surface working. The overburden is first removed by stripping, usually in operations of any size, by steam shovels or excavators, after which the phosphate rock is removed. This rock is of a soft, stratified nature and usually mixed with a certain amount of clay or foreign material. The rock is crushed and washed, after which it is thoroughly dried in large rotary dryers. It is then finely ground.

The blue rock occurs as a bedded formation usually between hard slate or limestone strata which form the roof and floor of the mine. While a number of mines have been opened in various parts of the district, there were few that were in continuous operation for much of the time during the past year. This stratum or seam of blue rock is of varying thickness, but where mined is usually about two feet. The mines are opened on the outcrop as drift mines, and are worked somewhat similar to the thin seam coal mines, that is on the single or double entry, room and pillar system, the pillars being drawn after the rooms are worked out.

The method of preparing the rock is by a system of crushing, drying, and pulverizing somewhat similar to that of the brown rock, except that no washing is necessary.

This table gives the name and the post office address of the operators of phosphate plants in Tennessee by counties for 1911.

Phosphate Operators in Tennessee in 1911

Giles County.

American Phos. Mining Co., Wales, Tenn.
Charleston S. C. M. & Mfg. Co., Mt. Pleasant, Tenn.
Consolidated Phosphate Co., Columbia, Tenn.
International Agr. Corporation, N. Y. City.

Hickman County.

American Phos. Mining Co., New York City.
Bear Creek Phos. M. & M. Co., Columbia, Tenn.
Chickamauga Fertilizer Works, Atlanta, Ga.
Consolidated Phos. Co., Columbia, Tenn.
Corn Belt Phosphate Co., Centreville, Tenn.
International Agr. Corporation, New York.
Meridian Fertilizer Factory, Meridian, Miss.
Prescott Phos. Mining Co., Boston, Mass.
Standard Guano and Chem. Mfg. Co., New Orleans, La.
Tenn. Cotton Oil Co., Memphis, Tenn.
Volunteer State Phos. Co., Centreville, Tenn.

Lewis County.

Charleston S. C. M. & Mfg. Co., Mt. Pleasant, Tenn.
Consolidated Phos. Co., Columbia, Tenn.
Dr. S. C. Long, Spring Hill, Tenn.

Marshall County.

F. H. Gault, Cornersville, Tenn.

Maury County.

Akin Phosphate Co., Columbia, Tenn.
Bear Creek Phos. M. & Mfg. Co., Columbia, Tenn.
Brown Rock Phos. Co., Mt. Pleasant, Tenn.
Central Phosphate Co., Mt. Pleasant, Tenn.
Century Phosphate Co., Columbia, Tenn.
Charleston S. C. M. & Mfg. Co., Mt. Pleasant, Tenn.
Columbia Min. & Mfg. Co., Columbia, Tenn.

Consolidated Phos. Co., Columbia, Tenn.
Farmers Ground Rock Phos. Co., Mt. Pleasant, Tenn.
Globe Phosphate Co., Columbia, Tenn.
Great Western Phos. Co., Mt. Pleasant, Tenn.
Independent Phos. Co., Columbia, Tenn.
International Agr. Corporation, New York.
International Phos. Co., Columbia, Tenn.
Jones Phosphate Co., Mt. Pleasant, Tenn.
Kittrell Bros., Mt. Pleasant, Tenn.
Dr. S. C. Long, Spring Hill, Tenn.
Mt. Pleasant Bone Phosphate Co., Mt. Pleasant, Tenn.
Petrified Bone Min. Co., Mt. Pleasant, Tenn.
Phosphate Supply Co., Mt. Pleasant, Tenn.
Preston Mining Co., Columbia, Tenn.
Tennessee Phos. Co., Mt. Pleasant, Tenn.
Williams Phos. Co., Mt. Pleasant, Tenn.
W. V. Wilson, Mt. Pleasant, Tenn.

Perry County.

Perry Phosphate Co., Nashville, Tenn.

Sumner County.

United States Fertilizer Co., Gallatin, Tenn.

Williamson County.

F. F. Clawson, Ashwood, Tenn.
International Agr. Corporation, New York.

Quantity and Value of Production in 1911

County	Product—Long Tons			Value of Product
	Blue Rock	Brown Rock	White Rock	
Giles. . .	....	19,711	....	$ 70,302
Hickman.	9,627	8,141	....	*54,687
Lewis . .	64,004	.....	....	224,014
Maury. .	....	439,728	900	†1,568,674
Sumner .	....	650	....	812
Total .	73,631	468,230	900	$1,918,489

*Blue Rock values amount to $28,882.
†White Rock values amount to $3,600.

Phosphate Product and Value in Tennessee in 1911 Compared with 1910

County	1911		1910	
	Product Long Tons	Value	Product Long Tons	Value
Giles. . .	19,711	$ 70,302	18,570	$ 64,995
Hickman.	17,768	54,687	14,583	43,794
Lewis . .	64,004	224,014	54,100	201,875
Marshall.	....	.....	20	70
Maury .	440,628	1,568,674	320,274	917,822
Sumner .	650	812	....	.....
Williams'n	....	.....	2,137	6,413
Total .	542,761	$1,918,489	409,684	$1,234,969

Product and Values of Phosphate Rock in Tennessee 1894-1911 inclusive

Year	Product (Long Tons)	Value	Value Per Ton
1894	19,188	$ 67,158	$ 3.50
1895	38,515	82,160	2.13
1896	26,157	57,370	2.20
1897	128,723	193,115	1.50
1898	308,107	498,392	1.62
1899	462,561	1,272,022	2.75
1900	450,856	1,352,568	3.00
1901	394,139	1,186,033	3.01
1902	454,078	1,341,161	2.95
1903	445,510	1,434,660	2.95
1904	468,443	1,485,665	3.17
1905	505,294	1,580,849	3.13
1906	499,815	1,852,840	3.71
1907	654,641	2,896,169	4.42
1908	415,388	1,625,890	3.91
1909	348,841	1,135,574	3.25
1910	409,684	1,234,969	3.01
1911	542,761	1,918,489	3.53
Total	6,572,701	$21,215,084	$ 3.23

This table shows the average price received for the domestic and the export product by counties, for 1911.

Sales and Prices Obtained for Phosphate Rock in Tennessee in 1911

County and Kind of Product	Sales		Sale Price Per Ton
	Quantity Long Tons	Amount	
Giles (Brown Rock)	15,831	$ 56,043	$ 3.54
Hickman:			
Blue Rock . . .	10,715	32,146	3.00
Brown Rock . .	8,253	26,181	3.17
Lewis (Blue Rock)	63,062	227,000	3.60
Maury:			
Brown Rock * .	441,183	1,737,448	3.94
Brown Rock † .	4,075	18,702	4.59
White Rock * .	800	3,200	4.00
Sumner, Brown Rock	....	....	....
Total	543,919	$ 2,100,720	$ 3.86

* Domestic.
† Export.

Exports

The exports of phosphate rock produced in Tennessee in 1911 were confined to the brown rock from Maury County. The reports of operating companies show the number of long tons exported to each country as follows:

	Quantity	Value
England	1,882	$ 8,305
France	910	4,072
Italy	1,283	6,325
Total	4,075	$18,702

THE PRACTICAL VALUE OF A SOIL ANALYSIS

(From the Journal of the British Board of Agriculture.)

Inquiries are frequently received by the Board from farmers and gardeners who wish to be informed where they can have soils analyzed. In most cases the idea appears to be entertained that having a soil analyzed is a ready means of determining its manurial requirements, or of obtaining an indication of its fertility. A brief discussion as to how far this view is correct may therefore not be out of place. Take, first, the broad question—to what extent does an analysis of a soil give an indication of that soil's fertility?

The fertility of a soil may be defined as its power of growing crops, and it is obvious that while this depends to a great extent on the soil's ability to supply the crop with what is often termed plant food—in particular, nitrogen, phosphate, and potash—in a suitable form, this is by no means the only essential condition. A sufficient and continuous supply of water to the roots, and proper aeration of the soil, are quite as necessary for satisfactory growth as the supply of manurial ingredients. To a very great extent these factors are regulated by circumstances of climate, exposure, drainage, and depth of soil, which obviously cannot be determined in the laboratory. Even if the analyst could give complete information about the plant food, and were able to measure accurately the mechanical condition (*i. e.*, texture) of the soil, and to correlate it exactly with the questions of aeration, drainage and water supply, the information obtained in the laboratory could only give a very incomplete idea as to the fertility of any particular field, and the farmer would have to supplement it by his local knowledge, experience, and judgment.

Unfortunately, however, the analyst cannot at present give more than very rough and incomplete information even about those factors influencing fertility which lie within his province. Some of the difficulties with which he has to contend may be mentioned here. He can determine as accurately as need be the total amounts of nitrogen, phosphates, and potash in the soil, but it has been found that, even where external factors such as climate, depth of soil, etc., do not enter into the case, there is often little or no connection between these amounts and the soil's fertility or its manurial requirements. Any ordinary soil contains much more total plant food of all forms than a single crop of any kind can possibly require. Most of this plant food, however, is in an unavailable or locked-up condition, and is only gradually set free or made available, the rate varying in different cases. As the plant can only make use of the free or available food, it is very easy to see that it is quite possible for one soil, containing quite small amounts of the manurial substances, to produce better crops than another soil containing large quantities, if for any reason the first soil gives up its material to the plant at a more rapid rate than the second. In fact, many soils contain very large quantities of, say, phosphates, and still respond most readily to small dressings of manures containing available phosphate, because practically all that is already in the soil is unavailable, and, as far as the plant is concerned, might almost as well not be there at all. (It may be remarked that exposure to air and weather, and treatment which secures a healthy condition of soil, are some of the factors which determine the rate at which plant food becomes available in the soil, so that, apart from their other important functions, good cultivation, draining, and liming may partly take the place of manuring in a soil which contains large stores of locked-up food.)

In the case of phosphates and potash, a method has been devised of roughly measuring the amount which may be regarded as of immediate or prospective value to the plant, by finding, not the total amount of phosphate or potash present, but the amount which is dissolved out in a given time by a weak solution of citric acid. This method gives results which in many cases indicate fairly well whether a particular soil will respond to applications of either of the two kinds of manure, and may be used in comparing soils of the same class. At the same time there are many cases where the results obtained are at variance with those obtained by actual experiment in the field. So far, no ready method has been discovered by which the availability of the nitrogen in the soil can be estimated except as regards the small amount present in the form of nitrates or of ammonium salts.

As already mentioned, two conditions essential for the satisfactory growth of crops are a sufficient supply of water and the proper aeration of the soil. To a great extent the ability of the soil to meet the plant's requirements in these respects is determined by the size and nature of the particles of which the soil is composed. By carrying out a "mechanical analysis," the proportions of particles of different degrees of coarseness can be measured, and as the results of such analyses accumulate it will probably become possible to estimate from such an analysis such factors as water-retaining power, ease of drainage, ability to withstand prolonged drought, and so forth, and even to say with some degree of certainty what systems of cultivation are most likely to result in a good tilth at any particular time of year. At present, however, such an analysis is tedious and expensive, and in most cases an experienced farmer would be able to gain more useful and accurate information by walking over the land and examining it carefully at different times of the year.

On the whole, in the present state of our knowledge, it must be concluded (1) that chemical and mechanical analyses of soils are of little practical value except in a few special cases; (2) that an intelligent and experienced local farmer could give a much better idea of the fertility of any particular farm or field than an analyst; and (3) that as a means of determining the manurial requirements of a soil a simple field experiment gives more accurate and reliable knowledge than ordinary analyses.

In certain special cases, however, soil analyses may undoubtedly be of great practical value, *e. g.*, (1) by a very simple test, which most farmers could carry out for themselves, it is possible to say whether a soil is in need of liming or not; (2) if, by means of a soil survey, such as those now being carried out in many parts of the country, complete information has been obtained with regard to some special class of soil occurring in a limited area, different samples of that particular soil can be compared and classified fairly accurately, and their manurial and cultural requirements predicted with a considerable degree of certainty.

STASSFURT POTASH AGENCIES IN FRANCE

The agents for the Potash Syndicate for the sale of their products in France are, Messrs. Origet et De Streicher, Paris, and Lambert Riviere & Co., Paris. The manufactory of chemical products is located at Auby (Nord).

The management of the Potash Syndicate informs its customers that they do not contemplate the establishment of any additional branches in France.

OPENS OFFICE IN SALT LAKE CITY

The H. W. Johns-Manville Company, manufacturers of asbestos building materials, New York City, have opened an office in the Dooly Block, Salt Lake City, owing to the increased demand for the products of the company in that section.

ASTOR DECIDES ON AGRICULTURE

It is reported that Vincent Astor, America's richest young man, has decided on scientific agriculture as one of his fields of endeavor, and will develop his farm on the Hudson River at Rhinecliff by scientific and modern agriculture. The farm contains over 6,000 acres. Governor Sulzer has just appointed young Astor as Chairman of New York's delegation to the general assembly of the International Institute of Agriculture, which will be held in Rome, Italy, next May.

SUPERPHOSPHATE FACTORY IN ALGERIA

A large factory for the manufacture of superphosphates has been established close to the city of Oran, writes United States consular agent, Albert H. Elford, Oran, Western Algeria. Sulphur is imported from Sicily and phosphates from Bona and Tunis.

THE ACID AND CHEMICAL FERTILIZER CO.

The Acid and Chemical Fertilizer Company, Kingston, Ontario, Canada, has just been incorporated with a capital stock of $2,250,000. The new company will establish a plant at Kingston.

THE CARTERET FISH AND OIL COMPANY

The Carteret Fish and Oil Company, Morehead City, N. C., has been incorporated with a capital stock of $25,000. The incorporators are R. W. Taylor, J. C. Taylor and John Allen.

OFFICE REMOVED TO SAVANNAH

The Read Phosphate Company announces that on February 1st the office of the treasurer, Mr. K. M. Read, which has heretofore been located at 16 Exchange Place, New York City, was removed to Savannah, Ga.

SALES OFFICE REMOVED TO SALT LAKE CITY

The Taylor-Wharton Iron and Steel Co., High Bridge, N. J., have removed their Western Sales Office from 203 Mills Building, San Francisco, to 504 Newhouse Building, Salt Lake City, Utah.

NEW SALES OFFICES AT BUFFALO

The American Cyanamid Co., Nashville, Tenn., have just opened sales offices in Buffalo, N. Y., which will be in charge of A. E. Bonn, Sales Manager. In addition to Buffalo, sales offices are now maintained at Nashville, Tenn.; Atlanta, Ga., and San Francisco, Cal.

THE FERTILIZER MOVEMENT IN GEORGIA

Reports from different sections of Georgia seem to be somewhat conflicting regarding the outlook for the consumption of fertilizers this season. One press dispatch from Atlanta states that "more commercial fertilizers are to be used in Georgia during 1913 than during any time in the history of the State, if the incessant demand upon the fertilizer department of the Georgia State Department of Agriculture for fertilizer tags is to be taken as a guide."

Another press dispatch from Georgia states that "conditions in the fertilizer trade are in no wise promising according to the talk among representatives of the manufacturers and material men of Atlanta. While they still have hopes of doing a good business this year, the season has opened up very slowly, and the sales today are considerably less than the average at this time of the year."

A late dispatch from Savannah, dated February 7th, states that "in spite of the fact that the season has been unusually late in getting under way, present indications are that this year's fertilizer shipments will not only exceed those of last year by a considerable amount, but will equal the shipments of 1911, which was the best year on record in the history of the industry. There are several reasons assigned for the success of the industry this year, and one of the best indications of it is the fact that, while the season was just about as late this year as last in commencing, the shipments to date are much larger than those for the same period last year."

FERTILIZER COMPANY REORGANIZED

The Farmers Fertilizer & Phosphate Company, Camilla, Ga., has been reorganized with an entire new set of officers, who are now in charge of the business. The new ojcers are: W. E. Hughes, President; J. J. Wicker, Vice-president; E. D. Black, Secretary and Treasurer and General Manager. The directors are: J. C. Wilson, G. C. Cochran, F. S. Perry, W. E. Hughes, E. D. Black and J. J. Wicker. The business will be conducted as heretofore, with offices at Camilla County Oil and Fertilizer Company.

NEW FERTILIZER FIRM FOR ALABAMA

It is reported that a new company has been organized at Clanton, Ala., for the purpose of conducting a general fertilizer business. Those interested in the new company are Moses Robinson, Dr. E. A. Matthews, P. D. Wilson, J. E. Robinson, and W. H. Sartor.

CHARTERING

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, February 13, 1913.

The following fertilizer-carrying vessels were contracted for in the local market during the past week:

Soda Nitrate.—British steamer "Hallamshire," 2,855 tons, from West coast of South America to United States, 34s 6d, with European options, April; British steamer "Atlantic City," 2,935 tons, from the West coast of South America to the United States, 38s 6d, option United Kingdom or Continent, 27s 6d, February; British steamer "Strathdon," 2,840 tons, from the West coast of South America to the United States, 36s, with European options, March; Norwegian steamer, "Vally," 2,780 tons, same, 35s, March-April.

Pyrites. — Swedish steamer, "Sydland," 1,845 tons, from Huelva to New York, Philadelphia or Baltimore, 11s, February; British steamer "Countess Warwick," 2,570 tons, from Huelva to Philadelphia, 9s 9d, Tinto terms, February.

Kainit.—British steamer "Dacre Hill," 1,715 tons, from Weser to Savannah, 10s, February.

Bones.—Italian bark "Taranaki," 1,060 tons, from Buenos Aires to New York or Philadelphia at $4.50.

MATERIALS IMPORTS AT NEW YORK

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, February 13, 1913.

The following imports were noted at this port during the past week:

Fertilizers n. e. s.—1,000 bags, "Alice," Trieste.

Bone.—705 bags, "Guantanamo," Tampico.

Kainit.—560 bags, "Barcelona," Hamburg.

Manure Salts.—550 bags, "Ryndam," Rotterdam; 225 bags, "Barbarossa," Bremen.

Muriate of Potash.—2,800 bags, "Pennsylvania," Hamburg; 5,540 bags, "Barcelona," Hamburg.

NEW MIXING PLANT FOR NORTH CAROLINA

It is reported that C. W. Horne, Clayton, N. C., will establish at Lillington, N. C., a fertilizer mixing and cottonseed oil plant.

631.05
AM

UNIVERSITY

"THAT MAN IS A BENEFACTOR TO HIS RACE WHO MAKES TWO BLADES OF GRASS GROW WHERE BUT ONE GREW BEFORE"

SUPPLEMENTAL BULLETIN
OF THE
AMERICAN FERTILIZER
A MAGAZINE DEVOTED EXCLUSIVELY TO THE COMMERCIAL FERTILIZER INDUSTRY
AND ALL ITS ALLIED INDUSTRIES

Vol. XXXVIII PHILADELPHIA, MARCH 1, 1913 No. 4

The Fertilizer Materials Market

NEW YORK

A Slight Improvement in the Materials Market. The Volume of Sales Increasing. Increase in British Sulphate of Ammonia Shipments. Fish Scrap Being Used for Poultry Feed. Firm Tone of Nitrate of Soda

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, February 27, 1913.

Slight improvement has been noted in the position of the local fertilizer materials market during the week, in that the inquiry and sales of various materials for prompt and nearby positions have increased. The volume of these sales also appears to be growing, and the South is now in a position where it is buying slightly larger quantities, although these amounts are small in comparison with the usual purchases at this time of the season. As far as can be learned there is practically no important business for distant delivery. The Southern mills are apparently content with buying small lots for their immediate or nearby use only. Some important business will probably develop soon in view of the heavy shipments being made by the Southern manufacturers.

Sulphate of Ammonia

The British producers have started the year well, shipments during January, 1913, amounting to 31,788 long tons, as against 28,051 tons during January, 1912. These figures show up remarkably well when it is taken into consideration that the shipments to the United States in January, 1913, amounted to but 2,409 long tons, as against 7,253 tons in January, 1912. Of the January shipments, those to France show large increases; those to Spain increased slightly, as did those to the Dutch

THIS SUPPLEMENTAL BULLETIN TO THE AMERICAN FERTILIZER IS PUBLISHED EVERY OTHER WEEK AND ALTERNATES WITH THE REGULAR ISSUES OF THE MAGAZINE. IT BEARS THE DATE OF ISSUE, BUT HAS THE SAME NUMBER AS THE PRECEDING REGULAR ISSUE. IMMEDIATELY UPON THE RECEIPT OF THIS SUPPLEMENT IT SHOULD BE PLACED IN THE REGULAR ISSUE PRECEDING

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East Indies and the British West Indies. Japan took slightly smaller amounts. The principal increases were those to unspecified countries. These shipments were 10,479 long tons in January, 1913, as against 3,384 tons in January, 1912. Late mail advices from abroad report a sagging market. Apparently considerable reliance is being placed on an increased inquiry from the United States, but this will hardly develop now unless some unforeseen developments occur. Little business has been reported during the week for domestic accounts. No important arrivals have been reported at Atlantic ports.

Pyrites

The movement in pyrites ore continues along very satisfactory lines, and business is brisk. The acid makers are buying in a large way, and apparently are running full blast. Arrivals from Spain continue heavy at all ports.

Fish Scrap

Aside from a small amount of scrap held by second hands in the South there is no domestic material to be had, and interest is therefore centered in the foreign product, which is held at firm but unchanged prices. The inquiry is quite active. The consumption of fish scrap for poultry feed appears to be on the rapid increase, and predictions are made that in time the material will command prices so high for such purposes that it will no longer be available for fertilizer purposes.

Blood and Tankage

No change has been reported in the position of the local market here during the week. Sellers apparently have but little difficulty in disposing of spot material, but the market is at the best a small one in comparison with other slaughtering points.

Meals

Nothing in the way of new interest has been reported for these products during the week. Mowrah meal is held at an unchanged figure, but buyers show limited interest. Foreign castor meal is offered for shipment on about the same basis per unit of ammonia as the fish ammoniates.

Calcium Cyanamid

Sales of powdered cyanamid have been reported as brisk in the Middle West and South Atlantic territories. Granulated is contracted for up to the end of March, but buyers for April and later months are showing interest. The present capacity of manufacturers will be doubled on March 1st, and plans are already drawn for quadrupling the present capacity of the plant before the end of the year.

Nitrate of Lime

The Norwegians continue to push this product, and their agents here report considerable progress, with fertilizer manufacturers revealing special interest. Values remain unchanged at previous levels.

Acid Phosphate

Rather tame conditions prevail in the acid phosphate market, and in view of the small profits now realized to manufacturers they are not pushing sales very energetically.

Bones

Prices on the various description of bones appear to be rather too high to permit of liberal operations on the part of buyers. Stocks of foreign material are liberal. Domestic material is being gathered from all over the country. Arrivals are reported here from Galveston and San Francisco.

Nitrate of Soda

As is usual toward the close of the month, the position is uninteresting in the absence of statistical data. The market has taken on a very firm tone, however, during the week, and quotations for all positions up to the end of April are higher and very strong. For positions after April, prices are some five points lower.

COTTONSEED OIL AND MEAL

New York, February 27, 1913.

The local cottonseed oil market has been one that is difficult to write extensively about during the past week, owing to the fact that activity has been confined solely to speculative interests who have bought when they thought they could made a profit and who sold when they thought they could do the same. However, there appears to be a moderate consuming demand, which is evinced by the fact that very little refined oil has been resold of late. Most of this material represents withdrawals against contracts closed earlier in the season. The refined oil situation is a firm one, as it is stated that the parity between crude oil and the refined article is now not at all in proportion. On the basis of present crude oil prices refiners contend that they should secure more money for their product. However, as consumers continue to operate in a very conservative way, buying nearby positions only for their immediate needs, there is nothing to do but to mark time and await developments.

The crude oil situation at the moment is a very interesting one. The mills are really to be congratulated for the manner in which they have handled the situation this year. Should the prices that are now prevailing for crude oil be maintained for a month more, the season will be remembered as the one in which the mills secured their record high prices. Crude oil throughout the crop year, which will shortly close, has been maintained on an unusually high level, and present indications do not point to a break before the close. It has been a long time indeed since the mills have been in a position where the buyers were compelled to come to them and meet their views rather than to accept such prices as were offered them. It has been a by-word in the trade that the crushers in the South never fully realized the true value of their product in this market, but they now appear to be gradually waking up to the fact that it pays them to keep posted fully in regard to conditions as they exist.

It is reported that fully 70 per cent. of the seed that will be crushed this year has already gone through the mills. The remaining 30 per cent. is somewhere in the South—just where no one seems to know. The planters are holding back their stocks in hopes of securing the best possible price, and the crushers are therefore paying from $25 to $28 per ton for seed that ordinarily in normal seasons costs $17 or less. Naturally they are not putting in extensive seed stocks. They buy seed against orders for oil, and running along in this manner they appear to be in a very healthy condition, financing the season without any apparent difficulty.

Meal and cake have also been selling on a very favorable basis during the season, and meal appears to have, for the time being at least, passed out of the category of vegetable nitrogenous manures. It could not at the moment be used for its nitrogen content with profit. With 7½ per cent. meal at $25, nitrate of soda on the basis of its ammonia content should sell at $3.15; sulphate of ammonia at $4.15. Of course, both of these commodities are now bringing much lower prices, so, while meal continues high, the fertilizer manufacturer will as a consequence be compelled to purchase the cheaper ammoniates. The consumption of meal and cake for feeding purposes is growing at such a steady rate that opinions are freely expressed that prices in a few years to come will be maintained on such a high level that it will no longer pay to use the product as a fertilizer ingredient.

GLUES

There is a good free movement against old contracts, and, while new contracts are booked now and then, there is not a great deal of this sort of activity. The leading factories generally have their entire output rather well contracted for, so that market conditions as a rule do not create undue anxiety. Some of the muckraking papers have again begun a campaign against the use of low-grade gelatines in edible products, and it is feared that this will tend to harm a trade that has been through a series of very trying periods the past few years. They apparently overlook the fact that the manufacturer must make the goods for which there is a demand—it is the unscrupulous user of the goods that should be attacked.

MISCELLANEOUS PACKING HOUSE PRODUCTS

The general provision market has been irregular and rather heavy during the interval. Receipts at packing points have been larger than anticipated, but this has been somewhat offset by the strength in grain. Lard has been subject to an advance, with considerable activity noted by speculative accounts. Receipts of hogs at packing points are the main point of interest to this trade at the moment, and interested parties are following these figures closely. Oleo stearine was firm, and then went off with the position practically unchanged. Lard compound has not been subject to any change during the interval, and the difference in value between it and pure lard still permits of ample freedom for consumers to operate. Sales of 100 tons of special tallow relieved an otherwise tame and routine market. Greases continue along rather quiet lines. The general tendency of soap-making vegetable oils has been downward during the week, in sympathy with linseed oil, which has declined and will probably go lower owing to the weakness in flaxseed.

ATLANTA

Farming Taking on New Life. An Increased Demand for Materials and Mixed Goods. Animal Ammoniates Firm

Exclusive Correspondence to "The American Fertilizer."

ATLANTA, GA., February 24, 1913.

With the advent of balmy spring weather in this section, farming and farm interests have taken on new life, and inquiries being received indicate that fertilizers and fertilizer materials will show an increased demand through the balance of the season. While the output will hardly reach that of the average season, a fair business is expected.

The animal ammoniate market has taken on a decidedly firmer tone, and with the good demand some advance in prices is likely. Inquiries are brisk for both blood and tankage.

Cottonseed Meal is freely offered, with the market slightly weaker in tone.

Fish Scrap is still being offered in small lots, though at a pretty stiff price.

Sulphate of Ammonia is in fair demand, though offerings are light.

Acid Phosphate is drawing but few inquiries, with offerings plentiful.

Potash.—Potash sales, particularly kainit and muriate of potash, have been very good.

Nitrate of Soda.—The market remains about the same, with but slight fluctuations in prices.

Pyrites Ore.—Sales for deliveries over this year and next are encouraging, the tone of the market is firm, and indications are that about the usual quantity will be taken.

PHILADELPHIA

No Change in Conditions Governing Materials. Manufacturers Well Stocked. Tankage and Blood Dull. Nitrate of Soda Firm

Exclusive Correspondence to "The American Fertilizer."

PHILADELPHIA, February 27, 1913.

On account of general market quietness during the past week there has been no change in conditions governing fertilizer materials in this section; the trade in general seems stocked to capacity in all lines.

Tankage and Blood are both extremely dull; quotations remain unchanged. So far as we can learn there is no present inquiry, and no business has been done for several days.

Nitrate of Soda continues firm on basis of last quotation, but we understand only spasmodic business is being done, confined to small lots to country mixers.

Sulphate of Ammonia has had no attention. We are informed the principal buyers have recently received large deliveries, and no buying is being done.

Potash Salts have been received in large quantities during the past week, being deliveries against contracts. In actual new business orders have been very limited.

CHARLESTON

Continued Healthy Condition of the Market with Inquiries Good. Stocks of Materials Are Low. Nitrate of Soda a Little Higher

Exclusive Correspondence to "The American Fertilizer."

CHARLESTON, February 25, 1913.

The condition of the market here continues very healthy. Inquiries continue good along all lines of raw materials. Stocks are reported as being low, with nearly all standard materials sold out.

Nitrate of Soda.—The nitrate of soda market here is very active. Prices show little advance over previous quotations. The continued demand has depleted the stocks here, so that at present they are very small.

Foreign Organic Ammoniates.—Reported nominal, with no demand. It is too late now to sell foreign goods, and so but few are being offered. Shipments would arrive here too late for this season's work.

Whale and Herring Guano.—The demand for whale and fish guano is very good, but the stocks have been exhausted, and no trading is reported.

Cottonseed Meal.—The price of cottonseed meal has declined recently, due doubtless to the small amount being used for fertilizers. The demand from the interior is supplied very largely by local mills, so that there is but little trading from Charleston for the supply of other points.

Western High-grade Ground Blood.—The demand continues to be active, with prices practically unchanged.

Western High-grade Tankage.—The demand is fair, with little change in the prices recently.

Acid Phosphate.—The interest in acid phosphate continues nominal. The demands are light, and offerings plentiful.

Phosphate Rock.—Few inquiries are reported, the market being rather dull, and prices practically at a standstill.

Kainit.—The demand for kainit is reported to be keeping up. The stocks are light at this port.

Pyrites Ore.—The demand continues good, the usual sales being reported.

Cyanamid.—Cyanamid is reported as in fair demand, with prices firm.

CINCINNATI

Activity in the Animal Ammoniate Market for Prompt Shipments. Higher Prices May Prevail as Stocks Are Light

Exclusive Correspondence to "The American Fertilizer."

CINCINNATI, February 25, 1911.

The animal ammoniate market is quite active for prompt and immediate shipments, which would indicate that the fertilizer manufacturers have not taken care of their requirements for their spring trade. The market in other materials continues about the same as in our last report.

Tankage and Blood.—These materials are being bought more heavily than for some time past; all sales being made are for prompt and immediate shipment. If the volume of tonnage continues, higher prices will, no doubt, prevail, as the stocks are light east of the Mississippi River.

Sulphate of Ammonia.—The market continues strong, with practically no change in prices.

Nitrate of Soda.—The small stocks at ports and the high prices for this material have resulted in little trading during the past week.

Acid Phosphate.—The market in this material remains dull, with prices firm. Plentiful offerings of this material are receiving little attention from the buyers.

Bones.—Some few sales have been made, but apparently requirements for the spring trade have been about taken care of.

Cyanamid.—The granular cyanamid is sold up for the next month, and consequently no sales can be made up to that delivery. The powdered material is active, with prices firm.

CHICAGO

Animal Ammoniates Quiet and Uninteresting. Some Large Sales of Tankage at Cleveland. Stocks of Bone Fairly Large

Exclusive Correspondence to "The American Fertilizer."

CHICAGO, February 25, 1913.

During the past week the market for animal ammoniates has been quiet and uninteresting, with not much change in prices. Some large sales have ben made by outside producers of tankage, especially at Cleveland, Ohio.

Packers claim to have made some moderate-sized sales of blood and tankage a little bit higher than figures they were asking a week ago, while other sellers have made sales a shade under figures they were asking a week ago, and all of them claim that their stocks are decreasing, as they are making fairly large shipments under contracts made some time ago.

The demand for blood is a little better than the demand for tankage, and most of the buyers want either 11 and 15 or 6½ and 30, and there is not much demand for the grades between.

The demand for the 6½ and 30 is largely due to the fact that Southern buyers are anxious to avoid the use of filler, and prefer to buy low-grade tankage if they can get it anywhere near the price of high-grade delivered at their works.

As there is not much trading in bone at this time of the year, stocks on hand are fairly large, and quotations are merely nominal, but some of the sellers are inclined to quote little bit lower price than they were asking during the winter months.

There is not much business in concentrated tankage, and there is not much hoof meal being made at present. Garbage tankage is mostly under contract, but little is offered for spring delivery. There is also a little business being done in dry extracted hair tankage, and some contracts of unextracted hair tankage are on the market.

BALTIMORE

Shipments of Mixed Goods Have Been Satisfactory. Animal Ammoniate Futures Firm. The Tone of Acid Phosphate Materially Improved

Exclusive Correspondence to "The American Fertilizer."

BALTIMORE, February 26, 1913.

The local fertilizer market is quiet. Shipments of manufactured goods, while up to the present time considered by the local manufacturers as satisfactory, have not made sufficient impression on stocks of crude material to produce any special demand for any particular article; on the contrary, for the time being the manufacturers seem to have ample supplies for their needs; at the same time, the local buyers are not averse to taking advantage of any attractive offerings that are placed before them.

Animal Ammoniates.—The tone of the market is about the same; if anything, the situation governing blood is in rather better shape than in reference to tankage. The larger

Western producers are still giving their careful consideration to all bids covering prompt or nearby shipment, and there seems to be more disposition on their part to meet the buyers. This applies almost entirely, however, to prompt and nearby. Their attitude on futures is as bullish as it has been for some time past, and they are making no concessions in their prices. In our local market there still continue to be offerings of various grades from smaller producers at prices that are lower than those asked by the larger sellers.

Acid Phosphate.—The market is quiet, and, while there are a few inquiries, the market is anything but active. The manufacturers, however, seem to have settled in their minds that the situation in this article is due for a change for the better, and, while prices have not advanced, the tone of the market has improved materially.

Nitrate of Soda.—The market continues firm, particularly as to early deliveries, with reduction offered for futures. There is little or no demand from a fertilizer source for this material.

Sulphate of Ammonia.—The market from first hands, both domestic and foreign, continues about as heretofore. There is a fair inquiry from second hands for both spot and nearby material.

Bone Meal.—Offerings are in good supply, but prices are too high to create an active market. The volume of business is small.

Potash Salts.—There is a continuous but not large inquiry for salts of the various grades from second hands at varying prices.

INDIANA AGRICULTURAL EXTENSION

The Purdue University Agricultural Experiment Station, Lafayette, Ind., has just issued a very interesting agricultural extension circular, No. 38, which gives full information regarding the formation, rules of contests, blanks for records, etc., of boys' corn clubs, girls' and boys' poultry clubs, girls' canning clubs and boys' and girls' potato clubs. These contests assist in improved methods of doing things and in securing greater efficiency. Through corn-growing contests it has been found that more than 225 bushels of corn can be grown on an acre of ground. Without the improvement of the ordinary method of corn growing this never could have been established.

GENERAL CHEMICAL COMPANY'S DIRECTORS MEET

At a meeting of the directors of the General Chemical Company, held in New York on February 21st, James L. Morgan, secretary-treasurer, was elected first vice-president, to succeed Edward H. Rising. Mr. Morgan will also continue as secretary of the company, but is succeeded as treasurer by his son, Lancaster Morgan. W. H. Nichols, Jr., one of the vice-presidents, was also appointed chairman of the Executive Committee. The other retiring officers were re-elected.

WILL DEAL IN FERTILIZERS

Articles of incorporation were filed on February 18th at Albany, N. Y., by the Standard Seed and Soil Inoculation Company, of Troy. The concern is capitalized at $1,000, and the application for a charter states that, among other things, the company will deal in fertilizers. The directors are John E. McDonald, 1913 Sixth Avenue, Watervliet; Isabel Kelly, and Bierce Bailey, Springside, Troy.

PROMOTION OF AGRICULTURE IN CANADA

Ten million dollars from the central Treasury of Canada are to be expended for the advancement of agriculture between now and 1923. The outlay will be principally to encourage agricultural education and for the dissemination of expert advice and information among farming people. The measure providing for the appropriation of this sum was introduced into the Dominion Parliament on January 24th by the Minister of Agriculture, and its passage is assured. Although the grant is made by the Federal Government, the actual expenditure of the money will be in the hands of the various provinces.

NEW EGYPTIAN PHOSPHATE COMPANY

The Societa Egiziana per l'Estrazione ed il Commercio dei Fosfati, which has recently been registered, owns two concessions, one near Kena, Egypt, on the Nile, and the other near Kosseir, Egypt, on the Red Sea. These deposits are estimated to yield 60,000,000 cubic meters of phosphate. An analysis shows that the product of these deposits is from 70 to 80 per cent. Work has already been commenced at the mines, and the company intends treating the phosphate from Kena itself for sale in Egypt or export. As regards the phosphates from the Red Sea, these will be exported to the Far East.

INTERSTATE COMMERCE NEWS

Transit Privileges Extended.—After a year of investigation into the uses and abuses of transit privileges on all commodities, the Interstate Commerce Commission has modified its former rulings. The carriers have demonstrated their ability and willingness to publish and enforce tariffs which will permit the operation of such privileges and at the same time conform to the law. In view of these facts the commission, in Opinion 2188, concerning Docket No. 3002, have withdrawn Conference Rulings 181 and 203 and Tariff Circular Rule 76.

* * *

Rates on Packing House Products.—In a recent case, represented by Docket No. 4817, the commission found the rates on packing house products between Austin, Minn., and Chicago to be unreasonable and unjustly discriminatory, and has prescribed reasonable rates for future shipments.

* * *

Limits of the Commission Defined.—In Opinion 2167, covering rates on lake cargo coal from Hocking Valley district of Ohio to the docks at Toledo, the commission ruled that it is "without authority to award reparation in any case unless it can conclude that the rate assailed was in violation of the act to regulate commerce during the period the shipments in question moved."

* * *

General Ruling.—A general application is incorporated in Opinion 2155: If two commodities, differing in name, have practically identical transportation characteristics, the same rules as to shipping in carloads should apply.

* * *

New Supplements to Fertilizer Tariffs

Supplement 6 to Ryan's Fertilizer Tariff No. 2, I. C. C. No. 30, covering joint, local and proportional rates on fertilizer and fertilizer materials from Baltimore to local and junction points in the South and Southwest, becomes effective March 10, 1913. This supplement contains all changes from original tariff.

Effective March 10th, there will be a new supplement to Ryan's Virginia Cities Fertilizer Tariff No. 1, I. C. C. No. 34, containing all changes. This tariff covers rates on fertilizer, fertilizer materials and pyrites from Virginia cities to local and junction points in the South and Southwest.

TECHNICAL REVIEWS

By THOMAS COULSON PINKERTON, A. B., B. S.

[Note.—This department has been established for the publication of reviews and abstracts of technical, scientific and general articles that are of interest to the fertilizer industry. It will be conducted by Thomas Coulson Pinkerton, analytical and engineering chemist, Philadelphia, Pa.

We will be pleased to receive from our readers, for review in this department, any bulletin, article, book or paper that they think would be of interest and value to the fertilizer industry.—Ed.

Recent Advances in Agricultural Science—The Fertility of the Soil.—Exp. Sta. Record 27, 9, page 818.

It is shown that in maintaining the level of intensive production the losses, particularly that of nitrogen, due to bacteria in the soil are increased out of all proportion until there is recovered in the crop only about one-fourth of the nitrogen applied in the manure. Hence there must be returned to the soil not merely the amount of nitrogen contained in the extra amount of crop produced, but several times that amount to repair waste, and still greater amounts when the fertility and production are increased.

The Influence of a Preceding Crop on Nitrification in Soil.—Jour. Ind. & Eng. Chem. Feb., 1913. Easton, Pa.

The study of the principles of crop rotation necessitates the investigation of the effect of plant growth on the soil. Certain plants grow better when preceded by a certain species of plant than by another. The writers have suggested that certain higher plants have a distinct influence on the process of nitrification in the soil, and that this influence varies with plants of different families. This was found to be the case.

The Chemical Composition of Important American Soils.—Exp. Sta. Record 28, 1, page 28.

Analysis of 18 soils and sub-soils in the eastern part of the United States. The sulphur content of soils is much lower than expected. The average of 18 determinations gave 0.044 per cent. sulphur. More attention should be paid to this element in fertilizer practices.

Proposed Amendment to New York Fertilizer Law

Assemblyman Cole, of Orleans County, New York, has introduced a bill in the New York Assembly which provides for the amendment of the present fertilizer law. The bill has been read once and referred to the Committee on Agriculture. The bill in full is as follows:

EXPLANATION.—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

AN ACT

To Amend the Agricultural Law, in Relation to Commercial Fertilizer

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section two hundred and twenty-two of chapter nine of the laws of nineteen hundred and nine, entitled "An act in relation to agriculture, constituting chapter one of the consolidated laws," is hereby amended to read as follows:

§ 222. Statement filed with commissioner of agriculture; license [fees] *and license tax.* Before any manufacturer, firm, association, corporation or person shall sell, offer or expose for sale in this state any commercial fertilizer or material to be used as a fertilizer, the selling price of which exceeds five dollars per ton, he or they shall, for each and every brand of commercial fertilizer or material to be used as a fertilizer, file annually, prior to January first of the calendar year, in which such commodity is to be sold, offered or exposed for sale, with the commissioner of agriculture a certified copy of the statement prescribed in section two hundred and twenty of this article. Every manufacturer, firm, association, corporation or seller of any commercial fertilizer or material to be used as a fertilizer the selling price of which exceeds five dollars per ton, shall pay [annually prior to January first of the calendar year in which such commodity is to be sold, offered or exposed for sale, to the treasurer of the state of New York a license fee of twenty dollars for each and every brand to be] *upon commercial fertilizers manufactured,* sold or offered or exposed for sale [.] *within the state a license tax as follows:*

Upon each ton thereof twenty cents.

Upon each one hundred pounds thereof one cent.

Upon each fractional part of one hundred pounds one cent.

The amount so paid shall be represented by stamps, which shall be provided by the commissioner of agriculture and delivered to the manufacturer, importer or dealer in commercial fertilizers upon his paying the commissioner of agriculture therefor. Such stamps shall be in such denominations, from one cent to twenty cents, as the commissioner of agriculture shall deem is necessary for the purposes of this act. If such commercial fertilizers shall be sold in sacks or other packages, then such stamps shall be conspicuously affixed to such sacks or other packages upon the outside thereof and cancelled in such manner as the commissioner of agriculture shall provide. If such commercial fertilizers be sold not in packages but in bulk, then the person so manufacturing or vending shall deliver to the purchaser the stamps that would be affixed to the packages if such commercial fertilizers were so sold as provided herein, but before so delivering, such vender shall cancel such stamps in the manner prescribed by the commissioner of agriculture as herein provided.

Whenever a manufacturer, firm, association, corporation or seller of any commercial fertilizer or material to be used as a fertilizer, the selling price of which exceeds five dollars per ton, desires at any time to sell such commercial fertilizer or such material and has not complied with the requirements of the statute, he or they shall before selling, offering or exposing the same for sale, comply with the requirements as herein provided. [Said treasurer shall in each case at once certify to the commissioner of agriculture the payment of such license fee.] Each manufacturer, firm, association, corporation or seller [who has complied] *complying* with the provisions of this article shall be entitled to receive a certificate from the commissioner of agriculture setting forth said facts. [Such certificate shall expire on the thirty-first day of December of the calendar year for which it was issued.] Whenever a manufacturer, firm, association, corporation or person shall have filed the statement and paid the license [fee] *tax* as prescribed in this section, [upon any given brand,] no agent or seller of such manufacturer, firm, association, corporation or person shall be required to file such statement or pay such [fee upon said brand] *license tax.* For the purpose of this article, commercial fertilizers or materials to be used as a fertilizer, shall be considered as distinct and separate brands when differing either in guaranteed analysis, name, brand or trade mark or in any other method of marking.

§ 2. This act shall take effect immediately.

CANNERS' CROPS

By HENRY G. BELL, Agronomist, Middle West Soil Improvement Committee of The National Fertilizer Association, Chicago, Ill.

[Bulletin No. 6, Canners' Crops, has just been published by the Middle West Soil Improvement Committee of the National Fertilizer Association, and is being extensively circulated among the growers of canners' crops in the Middle West Territory. It is an excellent example of the educational work of the committee. It contains facts that should be known, not only by every grower of canners' crops, but also by fertilizer manufacturers and salesmen.—Ed.]

The Canning Industry is Important

What would America do without her canned foods?

Do you know that last year's pack of canned goods was enough to give every family in this country

17 cans of Tomatoes.
15 cans of Sweet Corn.
8 cans of Peas.
110 cans of Fruit, Beans, Kraut, Pickles, Catsup, etc.

The canning industry has made it possible for the modern housewife to furnish her table at all times of the year with the choicest of fruits and vegetables. These products, "put up" with great care and cleanliness, provide appetizing and wholesome food for rich and poor.

The use of canned foods is growing rapidly on account of (1st.) the convenience with which they can be stored and handled in the home, (2d.) their wholesomeness, (3rd.) the variety of diet they make possible, (4th.) the moderateness of their cost, (5th.) the growth of city and town population, which is making the home garden impossible for an increasing number of families.

Growing Canning Crops is Profitable

When handled according to modern methods, the growing of canning crops is very profitable.

The ordinary yield of tomatoes is from 5 to 10 tons per acre, but where suitable varieties have been given up-to-date attention, 18 to 20 tons per acre are possible.

The following is an estimate of the cost of one acre of tomatoes:

	Per acre
Barnyard Manure—10 tons	$10.00
Plowing, Disking, Harrowing and Rolling	5.00
Fertilizer, 600 lbs. per acre	9.00
Plants and Planting	15.00
Cultivating—4 times	4.00
Hoeing and Weeding	1.00
Rent of land	6.00
Total	$50.00

Many things may increase or diminish this cost. It is given, therefore, simply as an average typical expense account of one acre of good tomatoes, grown under average conditions.

The tomato crop is usually contracted for by the factories at about $8.50 per ton. Estimating a yield of 15 tons per acre, there is a gross return of $127.50 for the acre, or a net profit of $77.50.

It is no uncommon thing for sweet corn growers to net between $50 and $100 per acre for their crop, where proper attention has been given to all the details of production.

The growers of peas, beans, berries and other canning fruits and vegetables claim equally good returns for their respective crops.

Quality is the Watchword of the Canner

There are certain essentials to quality in growing canning crops. They are as follows:

1st. The Crop Must Be Seasonable

By this, we mean that there must be sufficient length of season free from frost to allow the crop, of whatever kind, to make full growth, and mature its fruit. Unripe fruit or vegetables make poor canning material.

2nd. The Soil Must Be Suitable

Speaking generally, a medium to sandy loam responds most quickly in growing canning and truck crops. However, good crops have been grown even on heavy clays and muck soils. The suitability of the soil for canning crops depends largely (1st.) upon its drainage, (2d.) its supply of organic matter, (3rd.) its tillage.

3rd. Balanced Plantfood Must Be Supplied

By plantfood, we refer to the three elements of fertility which are usually deficient in the average soil—namely, Nitrogen, Phosphoric Acid and Potash.

Nitrogen determines the rapidity and extent of stalk or vine growth. Phosphoric acid has to do with the setting of the fruit, but its chief duty is to hasten maturity. Potash influences the filling of the corn, tomato, peapod, etc., and gives to the fruit added color and flavor.

Too much nitrogen in the soil makes the vine or stalk grow rank, and makes the fruit scarce and tasteless. An excessive application of barn manure often causes this condition of crops, since manure supplies too much nitrogen for the phosphoric acid and potash carried by it. The plantfood should be balanced to suit the crop.

This plantfood, besides being added in barn manure, is very profitably supplied in proper balance in the shape of fertilizers. Fertilizers should be of suitable analysis for the crops to which they are supplied, and should be applied correctly in sufficient quantities, if best results are to be obtained.

4th. Growth Must Be Rapid

Rapidity of growth generally produces tender, juicy and well-flavored fruit and vegetables. If the growing season is lengthened, too much fiber develops in the fruit, and it becomes woody. As was pointed out above, the rapidity of plant growth is governed largely by the supply and quality of plantfood.

5th. The Flavor Must Be Good, and the Color Bright

Flavor and color are very important essentials of canning crops. In the main, these qualities are governed by the supply and quality of plantfood. The addition of proper fertilizers gives a good deep color to tomatoes and lusciousness of flavor to all canning crops.

Important Points in Soil Preparation

The preparation of the soil for the growth of canning crops is a point of great importance. If possible, a Southern or Eastern exposure should be chosen, so that the soil will be ready to work as early as possible. The field should be well supplied with some system of drainage. If the water is held back in the soil, the field will be cold and late.

Besides being well drained, the soil should contain a good supply of organic matter or humus, so that it may retain moisture and plantfood in solution, and air may circulate through it.

Organic matter may be supplied to the soil by plowing under green crops such as second crop clover, or rye. The addition of strawy barn manure also is a valuable source of humus. Organic matter or humus added to a clay soil lightens it up; applied to sandy soil, green material or strawy manure gives it body.

As a general rule, it is good practice to plow the soil deeply in the fall, so that the weathering conditions of winter may have their beneficial reaction on it. If, however, the field has not been fall-ployed, best results can be obtained by thoroughly disking it once or twice and then plowing to a depth not exceeding 7 inches. The plow should be followed by the disk, roller and harrow till the seedbed is mellow.

Plantfood Supply is of Great Importance

The supply of available plantfood is all-important to canning crops. Good soil tillage liberates the plantfood that is already in the soil. The growing and plowing under of cowpeas, clover and other leguminous crops add nitrogen to the soil.

Good barn manure carries from 10 to 15 lbs. or ½ per cent. to ¾ per cent. nitrogen, 5 to 10 lbs. or ¼ per cent. to ½ per cent. phosphoric acid, and 10 to 15 lbs. or ½ per cent. to ¾ per cent. of potash per ton. This manure should be well rotted and protected from rain or snow. A spring application of 6 to 8 loads of manure to the acre gives great assistance.

Fertilizers a Profitable Source of Plantfood

Tomatoes, sweet corn, peas, etc., feed heavily upon the plantfood of the soil. Best quality is always secured when crops make rapid growth. This explains the necessity of providing additional plantfood beyond that which is naturally found in the average soil. Truck gardeners and growers of canning crops find the use of suitable fertilizers profitable.

In choosing fertilizers for canning crops, it should be kept in mind that they are harvested in what might be called the vegetative or fleshy form. The main objects then, beyond increasing the yields, are to get tender, juicy, well colored products. A typical fertilizer for these crops, then, should supply a medium amount of nitrogen, a medium to large amount of phosphoric acid, and a medium to large amount of potash.

Such fertilizer should be in good drillable shape, so that it may be evenly distributed. Care should be taken in applying the fertilizer to avoid allowing the seed to come in direct contact with it. If the seed falls directly upon the fertilizer, its vitality is injured. The fertilizer should be mixed with the soil before the seed is dropped.

For best results, the fertilizer should be stirred into the soil to a depth of 3 to 4 inches.

TOMATOES

According to the statistics of the "pack" of 1912, tomatoes were canned in greater quantity than any other canning crop.

This crop is one offering possibilities of excellent returns to the grower if it is given up-to-date care.

The Seedbed

The tomato seedbed should be given the careful preparation mentioned above. Pure seed of suitable varieties should be started early in March in the greenhouse. As soon as the plants are well started, they should be transplanted into cold frames in order to harden them. By the 10th to 20th of May, the most of the plants are strong and growing vigorously. The seedbed, after being worked down mellow, should be marked off into squares about 4 feet x 4 feet. Where the lines cross, is the place for setting the plants. A large handful of fertilizer should be scattered in a circle of about 4 feet diameter, with the setting place of the plant as center. This fertilizer should be thoroughly raked into the soil.

Fertilizers for Tomatoes

Fertilizers adapted to this crop, which have given excellent results, are mixtures carrying from 2 to 4 per cent. of ammonia, 8 to 10 per cent. phosphoric acid, 5 to 10 per cent. potash, applied at rates ranging from 500 to 1,200 lbs. per acre.

Transplanting

In transplanting, tomatoes should be thoroughly soaked so that as much soil as possible will adhere to the roots. The plants should be transferred rapidly to the field with as little root disturbance as possible. They should be set in a shallow basin, made by removing a hoe-full of earth. The soil should immediately be firmly packed around the plant and a small amount of water should be added to dampen the whole "basin." None but the strongest plants should be used. It is false economy to give the ground good preparation and then to use weakling plants.

Cultivation

As soon as the plants have made a good start, cultivation should begin. The grower will do well to bear in mind that the chief reason for cultivation is to preserve a thin surface mulch, which prevents evaporation of soil moisture. Of course, another important reason is to keep down weeds. Deep cultivation should be avoided at all times. The crop should be cultivated four times—twice each way. One hand-hoeing should remove the weeds, other than those which must be pulled when the vines will not permit hoeing. Cultivation when the fruit is well formed should be avoided, otherwise the ripening of the crop will be materially delayed. As soon as the fruit begins to ripen, picking should start. This usually occurs about August 15th in the Middle West. Frequent pickings increase the total bearings of the plants.

SWEET CORN

Sweet corn was a close second to tomatoes last year in quantity of cans put up.

Maine being one of the largest and most successful States in growing sweet corn, we quote from the Maine Experiment Station. (Bulletin No. 183.)

What Maine Experiment Station Advises

The Maine Experiment Station in its summary of important points in growing sweet corn for packing (Bulletin No. 183) says:

"1. *Plant Early.* The growing season in Maine is short under the most favorable circumstances. Under present conditions, the farmer must take chances at one end of the season or the other. Too often he plants in such a way as to take them at both ends. General observation shows beyond any question that the farmers who are most successful with sweet corn (i. e., who make the most money at the factory year in and year out) are those who plant relatively early. That is, they elect to take their chance at the beginning rather than the end of the growing season. At the worst they may have to plant a part of the piece over again. Whereas if the loss is by frost in the fall, it is total and irreparable. Observation indicates that it should be a rule to plant as soon after May 15 as the soil is in condition." (Note—In the Middle West planting can of course begin considerably earlier, according to latitude.)

"2. *Use Plenty of Manure and High Grade Commercial Fertilizer.* Too many farmers try to grow sweet corn without any or with too little commercial fertilizer. This is a suicidal policy under Maine conditions. Eight hundred to a thousand pounds of fertilizer to the acre is not too much for most land on which sweet corn is grown in the State."

"3. *Keep the Corn Free from Weeds and Well Cultivated.* The corn should be cultivated at least once a week, until it is too tall to allow the horse to get through without breaking the leaves. It should be hoed by hand at least twice, and preferably three times. All cultivation must be shallow or the roots will be injured."

"4. *Do Not Plant Too Thick.* Here is where a mistaken policy is most often followed. Experience shows clearly that when sweet corn is planted in rows three feet apart, and with the hills 18 inches apart in the row, it is very unprofitable both as concerns the amount and quality of the ears, to allow more than 3, or at the very outside, 4 stalks to stand in the hill. Three stalks to the hill is better than 4.

"5. *Use Seed Well Adjusted to the Locality in Which It Is to Be Grown.* Extensive experiments and observation show most clearly that the best results cannot be expected from seed produced in another locality and in a different environment from that in which it is to be planted. It is to the common interest of both the farmers and the packers to use not merely Maine grown but locally grown sweet corn seed. This seed should be selected for local adjustment. The farmer, in his own interest, should avoid new kinds of seed which he has not found to give satisfactory results on his own or his neighbor's farm."

The advice offered in the above quotations is applicable to a large extent to the localities in the Middle West where canning crops are grown, since in many cases similar climatic conditions prevail during the growing season. The general principles noted are necessarily applicable.

Plantfood and Cultivation of Great Importance

It is difficult to lay too much emphasis on thorough soil preparation for this crop wherever it is grown. Careful tillage must be given, and available plantfood must be provided. A suitable fertilizer for sweet corn supplies about 2 to 4 per cent. ammonia, 6 to 8 per cent. phosphoric acid and 5 to 8 per cent. potash. When used in quantities of 600 to 1,000 lbs. per acre, half of it should be drilled into the seedbed with a wheat drill supplied with fertilizer dropping attachment. The remainder should be dropped with the seed in the hill, taking care again that the fertilizer when dropped is mixed with the soil before the kernels drop.

An abundance of suitable available plantfood for corn insures a rapid growth of plant, and an early maturity of tender, delicious kernels. It means, in short, maximum yield of best quality.

PEAS

In 1912 there were put up about half as many cans of green peas as of tomatoes. This crop is one of special importance when soil of medium to sandy loam is worked.

The best canning peas are tender and juicy.

Important Point in Growing Peas

In order to get a uniform product for canning, but one pure variety of seed should be used. It should be planted on ground carefully prepared, and supplied with available plantfood. Peas belong to the legume family, and have the power of taking nitrogen from the air and fixing it in the soil, but this nitrogen cannot be made use of till the plant dies and the roots rot. Consequently, there should be nitrogen in the fertilizer applied to the peafield. Uniform, rapid maturity is desired. Phosphoric acid and potash must therefore be present in sufficient quantity. Profitable results have been obtained by applying 400 to 600 lbs. per acre of a fertilizer carrying 2 to 4 per cent. ammonia, 6 to 8 per cent. phosphoric acid and 2 to 6 per cent. potash. Half of this fertilizer should be drilled into the seedbed and half through the planter in such manner that the peas do not come in direct contact with it.

In order to get uniform tenderness and quality, the pea crop should be cut while the peas are tender.

BEANS

A considerable quantity of green string beans are annually put up in cans. This crop, like peas, does best on a medium to light loam. Careful preparation must be given to the soil for this crop.

The bean is most valuable for canning purposes when the tiny seed has just started to form. Unlike peas, it is the tender pod which is valuable for canning in this crop.

Plantfood Governs Quality

In order to get a uniform, tender, sappy growth of beans, the plantfood should be carefully balanced. Excellent results are reported from the use of 800 lbs. per acre of a fertilizer carrying about 2 to 4 per cent ammonia, 6 to 8 per cent. phosphoric acid and 5 to 8 per cent. potash. This fertilizer was applied around the hill in much the same way as the fertilizer supplied to the tomatoes mentioned above.

Beans must be picked while they are tender and young, and before they become stringy.

When this crop is intended for canning with pork in the seed stage, the plantfood should be different. A fertilizer carrying more phosphoric acid gives best results. Assistance must be given to the maturing and filling of the seed.

Note. In the above discussions we have touched upon the cultural points of only four of the important canning crops. The four selected are those largely used for canning. We have purposely avoided mentioning specific varieties of each of these crops for two reasons: (1) The popularity of varieties differs with different localities. The question of variety is usually settled by the canner contracting for the crop. (2) Varieties must be chosen to suit climatic and soil conditions.

SUMMARY

1. *Essentials to Quality.*

(a) The crop must be seasonable.

(b) The soil must be suitable.

(c) Balanced plantfood must be supplied.

(d) Growth must be rapid to make the product tender.

(e) Flavor must be good and color must be bright.

2. *Important Points in Soil Preparation.*

(a) The seed bed must be well drained.

(b) The soil must be supplied with organic matter or humus.

(c) The soil must be well tilled and mellow.

3. *Plantfood Is of Great Importance.*

The plantfood found naturally in the soil, and that supplied by barn manure must be balanced so that the elements of plantfood, each of which have a distinct part to play in plant growth, shall produce the largest amount of best fruit.

TOMATOES

4. *Important Points in Growing.*

(a) Plantfood must be suited to the crop. The following fertilizer has been found to give good results:

> 500 to 1,200 lbs. per acre of a fertilizer analyzing 2 to 4 per cent. ammonia, 8 to 10 per cent. phosphoric acid and 5 to 10 per cent. potash.

(b) The young tomato plants should be strong and sturdy.

(c) The cultivation should be shallow, and should cease as soon as tomatoes begin to form.

SWEET CORN

5. *Important Points in Growing.*

(a) Plant early.

(b) Give plenty of available plantfood. Good results have been obtained on sweet corn by using 600 to 800 lbs. of fertilizer analyzing 2 to 4 per cent. ammonia, 6 to 8 per cent. phosphoric acid, and 5 to 8 per cent. potash.

(c) Cultivate the corn thoroughly.

(d) Plant thin, not more than 4 stalks to the hill.

(e) Use seed which is adjusted to the climate.

PEAS AND BEANS

6. Tenderness as well as yield are desired in both these crops. Available plantfood must therefore be supplied in large quantities. From 400 to 800 lbs. per acre of a fertilizer analyzing 2 to 4 per cent. ammonia, 6 to 8 per cent. phosphoric acid and 2 to 8 per cent. potash has given excellent results.

MR. KIMBLE BACK AT HIS DESK

The many friends of Horace G. Kimble, of the Kent Mill Company, New York City, have probably been wondering why they have not been hearing or receiving calls from him for the past few months. Mr. Kimble has been laid up with neuritis since the latter part of November, but is now back at his desk completely recovered and in perfect health.

EFFECT OF RAIN ON SOLUBLE PHOSPHATES

The Centralblatt für Agrikultur Chemie, a well-known German paper, reports that a series of experiments were recently carried out on various soils to ascertain the depth to which phosphoric acid, as contained in superphosphate, is carried by rain water. The results showed that (except in very sandy soils) the phosphoric acid is almost wholly retained in the upper few inches, even though the rainfall be heavy and continuous. For the experiment a superphosphate containing 17 per cent. of soluble phosphoric acid was used, and it was found that heavy clay soils retained in the upper 3 inches the equivalent of 1,000 pounds per acre; that loamy soils retained that amount in the first 6 inches, while loose, sandy soils allowed of quite deep percolation. An experiment conducted on a black clay soil showed that the uppermost 6 inches contained 30 per cent., evidently having retained the bulk of the phosphate which had been added over a number of years, since the next 6 inches only held 0.05 per cent.—Fertilizers.

FERTILIZERS IN RUSSIA

Increase in Consumption of Fertilizers a Feature of the Agricultural Situation. Extensive Use of Superphosphate

Exclusive Correspondence to "The American Fertilizer."

ST. PETERSBURG, February 10, 1913.

The increase in the consumption of artificial fertilizers in Russia is one of the features of the agricultural situation which lends most promise to the future development of that almost monopolistic industry of the country, namely, the cultivation of cereals, in which by far the largest portion of the population finds its means of existence. This increase in the appreciation of the value of artificial fertilizers has been particularly noticeable during the last five years, dating, say, from 1907, when the agricultural department spent 8,000 roubles on experiments in fertilizers. In the following year a similar sum was so spent. But the importance of the expedient was recognized, and in 1909 35,000 r. was spent on such experiments; 80,000 r. in 1910; 164,170 r. in 1911, and last year the sum total for experiments in fertilizers was 178,000 r.

That the expenditure in education, so to speak, was justified is obvious in the returns for the importations of these goods into Russia. In 1907 the quantity imported amounted to 6,486,000 poods of Thomas slag and superphosphates. The combined total in 1908 had declined to 6,210,000 p. But the rise has been rapid since then, namely, to 10,230,000 p. in 1909, 15,237,000 p. in 1910, and 17,938,000 p. in 1911. Respecting 1912 data are not yet available; but it is well known from preliminary statistics collected that 1912 is going to show a handsome surplus in the matter of imported artificial manures as compared with 1911.

Consumption of Superphosphates

About 95 to 96 per cent. of the consumption of artificial fertilizers is in superphosphates, the production of which in Russia is relatively very limited. In 1907 this amounted to 6,800,000 p., and in 1911 to only about 9,000,000 p. Thomas slag in Russia is only obtained from two factories, as is known, namely, at Sartana and Taganrog, and the quantity obtained from these metallurgical works is no more than 1,000,000 p. a year. There is no prospect of the production being substantially increased, because these factories do not use the Thomas system of smelting, and work only on the Marten system, because of the high quality of the Russian iron ore. The Russian superphosphate factories up till recently have been located principally in the Baltic provinces, where it is found most convenient to treat the phosphorites that are brought from abroad. Some of them are located on the Black Sea coast, and, of course, for the same reason. The production was limited in 1907, and did not exceed 5,800,000 p., rising as stated above to about 8,000,000 p. or little more in 1911. Russian factories of soluble phosphates happen to be in agreement with the foreign syndicates, so that their production has no effect on the market price of the fertilizers, Thomas slag and superphosphates, which have been sold in Russia up till the present at a remarkably high price or about 40 per cent. higher than the foreign price in western governments of the country and 80 to 100 per cent. higher in the eastern governments of Russia.

The Phosphorites of Russia

The problem, as is now well known, for Russia as far as home fertilizer manufacture is concerned is to turn the poor phosphorites of the eastern and northeastern provinces to good commercial account. When the useful chemical content is pretty low the commercial value of manufacture becomes problematical, but it is maintained that the experiments carried out with this disadvantage in view, by instruction of the agricultural department, have been eminently successful, and a series of such experiments that were conducted by the Kostrom, Viatka, Perm and Kazan Governments, where the reserves of phosphorites are known to be very extensive, resulted in such satisfactory returns as to satisfy the authorities that these great fields of phosphorites can be turned to good economic use on the Russian grain fields, particularly as these governments are in fairly close proximity to the pyrites deposits that are now being worked so energetically by both foreign and Russian houses both for the production of metallic copper and of sulphur itself. Thus the phosphorites and the raw material for sulphuric acid are within relatively easy reach of each other, and the superphosphate can be produced locally from the poor phosphorites on better terms than the higher class article can be brought over the immense distance from the Baltic or Black Sea ports.

Local Factories

It was in view of this that in 1911 some of the Zemstvos (village councils) of the eastern governments bethought them of the construction of superphosphate factories for the needs of local and neighboring agriculturists, and with this object in view, on the initiative of the Perm Zemstvo, a council was called which had as a result the formation of a body to carry out the idea of public superphosphate factories. Conscious, however, of the poverty of many of the deposits, a part of the program of the new body is to include geological investigations of the land, hoping to find phosphorites of a richer quality that would obviate perhaps the necessity of working up the poorer deposits now known. At the same time, money is not plentiful in those parts, and another part of the body's program is to raise money, if possible, for the purpose by special appeal to the Government for assistance.

It may be said here in passing that the Government looks with a very kindly eye on the proposition, and has, at all events, homologated the proposal to build the factories. One of the great hindrances to the development of the local industries in Russia is the backward state of the Russian machine shops. Much of the machinery for carrying on natural local industries has to be brought from abroad, and pays an enormous duty on entering the country, because the Russian machine builders are not capable of producing an efficient machine at a reasonable price. This is so, for example, in respect to gold dredges, gas engines, refrigerating machinery, agricultural implements, textile machinery and so on. It becomes, therefore, a very severe tax on a local industry when an enormous price has to be paid for the machinery, which is quite sufficient at times to kill all chances of success. Therefore the Zemstvos referred to appealed to the Government to admit free of duty all machinery, apparatus and parts of plants not now being made in Russian factories, also the carriage of raw material necessary for the production of superphosphates and other fertilizers at the reduced tariff, as well as special facilities for the acquisition of timber and other building material for the construction of the factories and workmen's dwellings.

A System of Loans

The problem that exercises the minds of the Russian industrialists just now perhaps more than at other times is the introduction of a system of loans on merchandise, just as the cold storage industry is agitating for loans by the Imperial Bank on perishable products in cold stores, to which great objection is raised on the part of the bank itself. The Zemstvos referred to are agitating in similar fashion for loans to the producers of superphosphates, etc., on the security of the fertilizers completed and ready for market. It is not likely that these facilities will be granted; it is not even likely that they will be wanted. If the fertilizers are produced on anything like economic terms the market is sure to take it up in much larger quantities than any Russian enterprise can be capable of producing for many years to come, so that loans on fertilizers in stock is hardly a practical question. On the other hand, the purchase of machinery, which is as a rule expensive, and cannot be realized on the market, becomes a fair subject for such financial negotiations, and it is quite possible that the Government may consent to grant the facilities offered in the form of debentures on the property or as a loan to the community on general security.

A Matter of Urgent Importance

The new situation created by the Zemstvos in adopting the production of fertilizers as a matter of urgent public importance shows the great advances being made in the minds of the Russian farmers respecting these goods; but the mere fact of the step being taken by public bodies should not have too much importance attached to it. Probably in no country in the world is co-operative action so highly developed as in Russia, unless it is Denmark; therefore common action for public purposes is quite a common thing in that country, and it is therefore not remarkable that it should be adopted in respect to such an important question as the fertilizing of grain-bearing land, which is the most important Russian asset by far from the economic point of view.

TO REBUILD SHAY PLANT

The plant of the C. M. Shay Fertilizer Company, Groton, Conn., which was destroyed recently by fire, will be rebuilt at once. Architects have been employed to submit plans, and work will be started as soon as possible so that the company may be able to resume operations at the earliest possible moment.

TO HANDLE FERTILIZERS

B. Campbell & Company, Inc., at Sea Cliff, N. J., have been organized to deal in fertilizers and agricultural implements, with a capital stock of $50,000. The incorporators are Melvin G. Palliser, Douglas B. Green and Lynn W. Thompson, 311 West Ninety-fourth Street, New York City, N. Y.

WILL ESTABLISH MIXING PLANT

It is reported that Ricks Bros., associated with C. H. and J. H. Neisler, have leased the old mixing plant of the Farmers' Warehouse and Fertilizer Company at Butler, Ga., and will operate it for the local trade.

NEW NITROGEN PROCESS

Will Be Produced as a By-Product from Coking and Other Combustible Gases. Plant Being Constructed in Germany

Exclusive Correspondence to "The American Fertilizer."

BERLIN, February 5, 1913.

Not long ago at Herrigen, near Hamm, in Westphalia, the Nitrogen Works Company was founded, which will operate in conjunction with the house of Les Petits Fils de François de Wendel & Cie, of Hayangen, with a capital of one million marks. With the new process which these joint houses have adopted, nitrogen instead of being produced by electrical process or by the ammonia process of Haber, will be produced as a by-product from coking and other combustible gases which escape in enormous quantities, and are considered an almost waste by-product by the blast furnace works, etc. It will transform the power of the combustible material, which hitherto has been employed for power in gas machines, Diesel motors, and the like, for the first time directly into a chemical form of energy.

The process consists in the combustion of combustible gases mixed with air, with an addition of oxygen under pressure in so-called bombs. (This is the fresh feature in the process.) In order to complete combustion, whereby, through oxidation of the atmospheric nitrogen, oxide of nitrogen is formed. Immediately after the explosion the reaction mixture is released from the bomb and is thereby so rapidly tranquilized that a separation of the nitrogen-oxygen combinations is prevented. The fact that when the gas explosion takes place the oxide of nitrogen is formed has long been known; but this process has only been used technically, and has not been turned to commercial use, because, according to ruling theoretical views respecting the formation of oxide of nitrogen, the attainable maximum results were too insignificant to make it appear worth while to try this method of winning the greatly needed nitrogen for economic purposes.

By means of a series of laboratory experiments Professor Haüsser found that in large explosion vessels with a rapid reduction of energy of the gas mixture, advantage can be taken of the results after the explosion, which theoretically amounts to more than 100 per cent. On the basis of this laboratory test a large experimental plant was constructed in a machine shop at Nuremburg, which constituted something unique in technical operation. The process was carried through here technically, so that the difficulties respecting machinery, which we considered from more than one point of view as simply insuperable, were overcome, and a complete control of the chemical process was achieved. It was shown in the test that from one cubic meter of gas 200 grams of saltpeter acid or the corresponding quantity of saltpeter salt could be won with an expenditure of power of about one-fifth less than in the electrical process.

The process of Haüsser is therefore not bound down by the question of the cost of power, and does not require anything like the initial capital that is required for the production of atmospheric nitrogen in hydro-electric power installation alone. It may be established in any industrial country and can produce saltpeter acid, nitrite, ammonia, saltpeter, potash and manure saltpeter on favorable commercial terms. This means an advantage over the electrical installations, which are situated in the mountains, far from economic life, and have therefore to find a way for their products over long and expensive routes. The process will shortly be turned into account in connection with the by-product plants of coal mines, with which it can be associated without difficulty in every stage of its operations. A large plant is under construction for the de Wendel works at Hamm, and will be set to work in the coming spring. The de Wendel works produce about 60,000,000 cubic meters of waste coking gas every year, which hitherto appeared to be dissipated uselessly. For the whole of Germany a waste of about 2,400,000,000 cubic meters of such gas is estimated. With the working up of such gases from the coking ovens, the utility of the process is not yet exhausted. Just in the same manner natural gas and generator gas, as also liquid fuel waste gas, can be converted into nitrates.

THE NATIONAL NITRATE SOCIETY

The National Nitrate Society has been organized in Santiago, Chile, with a capital stock of $6,000,000, for the purpose of exploiting nitrate properties in Chile.

TEXAS COTTONSEED CRUSHERS

The next convention of the Cottonseed Crushers' Association will be held at San Antonio, Texas, the exact date not having yet been announced. The convention will be held some time during the coming summer. The convention was held last year at Houston, Texas.

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"THAT MAN IS A BENEFACTOR TO HIS RACE WHO MAKES TWO BLADES OF GRASS GROW WHERE BUT ONE GREW BEFORE"

SUPPLEMENTAL BULLETIN
OF THE
AMERICAN
FERTILIZER

A MAGAZINE DEVOTED EXCLUSIVELY TO THE COMMERCIAL FERTILIZER INDUSTRY
AND ALL ITS ALLIED INDUSTRIES

Vol. XXXVIII PHILADELPHIA, MARCH 15, 1913 No. 5

The Fertilizer Materials Market

NEW YORK

Very Little of Special Interest in the Local Market. Brisk Trade in the South for Prompt Shipment. Imports of Sulphate of Ammonia Heavy. Fishing to Commence Shortly. Spot Nitrate Firm and High

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, March 13, 1913.

Generally speaking there has been little in the way of special change noted in the local materials market during the past week. There is a brisk orders noted from the South for prompt shipment of small lots of various ammoniates, potash salts and phosphates and the aggregate of these sales is reaching sizable proportions. Instructions accompanying these orders are invariably marked "rush" so that the trade here is busy, although the tonnage sold is not up to the average of other years. The Southern buying season is now pretty well over and while most houses here report that they did "pretty well" they admit that sales this season were not as heavy as those of past seasons. Buying for the account of the Northern factories will shortly commence. Some years these people contract for their season's requirements as early as October, but it is thought here that a great many contracts are still open and that the materials trade will witness considerable buying on the part of the Northern mixers within the next month.

Sulphate of Ammonia

Arrivals of sulphate from abroad continue very heavy. During the week some 5,000 bags arrived at Baltimore from Liverpool. At Norfolk about 4,850 bags arrived from Liverpool and Glasgow. At New Orleans a small lot was also reported from Liverpool.

THIS SUPPLEMENTAL BULLETIN TO THE AMERICAN FERTILIZER IS PUBLISHED EVERY OTHER WEEK AND ALTERNATES WITH THE REGULAR ISSUES OF THE MAGAZINE. IT BEARS THE DATE OF ISSUE, BUT HAS THE SAME NUMBER AS THE PRECEDING REGULAR ISSUE. IMMEDIATELY UPON THE RECEIPT OF THIS SUPPLEMENT IT SHOULD BE PLACED IN THE REGULAR ISSUE PRECEDING

PUBLISHED FORTNIGHTLY BY WARE BROS. COMPANY, 1010 ARCH STREET, PHILADELPHIA. R. C. WARE, PRESIDENT; W. F. WARE, VICE-PRESIDENT; A. M. WARE, SECRETARY AND TREASURER; JOHN D. TOLL, EDITOR. DOMESTIC SUBSCRIPTION, $2.00 A YEAR (TWENTY-SIX ISSUES AND SUPPLEMENTS); THREE YEARS, $5.00; FIVE YEARS, $7.50. CANADA, $2.50; FOREIGN, $3.00. SINGLE COPY OF CURRENT NUMBERS, 25 CENTS; BACK NUMBERS OVER THREE MONTHS OLD, 50 CENTS EACH. REGISTERED IN THE UNITED STATES PATENT OFFICE. COPYRIGHTED, 1913, BY WARE BROS. COMPANY

These shipments represent, of course, deliveries against contracts made earlier in the year. Just at the moment there is a fairly brisk demand noted for spot lots of sulphate for immediate delivery. Quotations for the week are a trifle easier in sympathy with the situation abroad. A foreign journal mentions the fact that while the United States has now direct steamship connections with the Spanish ports, the English manufacturers of sulphate and other fertilizer materials have been able to maintain their trade with the Castilian Kingdom. Of course, it is news to the American trade that any effort has been made to ship fertilizer materials abroad. On the contrary the United States has never been able to supply one-half of the raw material necessary for the enormous tonnage of commercial fertilizer manufactured here very year. England need not worry on this score. The United States will hardly ever be an important exporter of fertilizer materials aside from phosphates. Our growing agriculture will take care of any domestic production of materials and the great part of the production of several foreign countries.

Pyrites

Arrivals during the fortnight consisted of some 11,500 tons at Baltimore and 4,955 tons at New York. Reports from the South indicate a good demand for ore there and the acid makers are apparently quite busy.

Fish Scrap

Fishing in the Southern waters for herring should begin shortly, as the vessels are generally on the lookout for this fish about the middle of March. There is some doubt as to the number of boats that will go out this season. Last season was disappointing in some respects as the catch per boat was below the normal. A number of ship owners have stated that they will turn their vessels into the edible fish trade this season rather than take the chance of making another poor showing. It is presumed that the factory to be erected at Port Arthur, Texas, will operate most of the entire year. Sharks are plentiful in the Gulf waters, however, and they will, no doubt, create a problem that will have to be overcome. There is nothing special to report for the scrap market at present. Domestic stocks are practically wiped out and there is a fairly good demand for spot parcels of foreign material.

Blood and Tankage

Neither of these articles figure very prominently in the trade here and sellers who have material for prompt shipment have but little difficulty in effecting sales. Accumulations of stocks are exceptions to the rule. South American blood is being offered in the South but at slightly higher prices than domestic prices.

Meals

There is nothing new to report for items under ths heading. Mowrah meal is offered for prompt shipment but attracts comparatively little attention. Castor meal is also offered for shipment from abroad on about the same basis per unit of ammonia as other ammoniates. Rape meal is not quoted here.

Calcium Cyanamid

Manufacturers report a good demand for cyanamid for prompt shipment and for delivery as late as May. Granulated cyanamid is contracted for up to the end of March, but shipments on six months' and nine months' contracts thereafter are offered. Powdered cyanamid is held at 20 cents per unit less for shipment in any position.

Nitrate of Lime

Agents of the Norwegian manufacturers report continued progress for their product and the American fertilizer mixers show more and more inclination to experiment with the product. Sales for European accounts have been so heavy that the Norwegian plant has had difficulty in filling these contracts.

Bones

Arrivals of over 4,000 bags of bone meal were noted at New York during the week; also 786 bags of crude bones from Tampico. At Baltimore some 58 tons of bone dust came in from Liverpool. Business in bone appears to be rather slow, principally due to the fact that prices are too high for consumers. Supplies in nearby positions are none too liberal.

Nitrate of Soda

Business in nitrate during the past week or ten days has been rather free, especially for small lots for prompt shipment. Spot and nearby positions are firm and at some ports nitrate for immediate shipment is commanding high prices. For future delivery concessions are obtainable and brokers are asking for counterbids.

The following figures covering the statistical position are of interest:

	1913 Tons	1912 Tons
Estimated Feb. shipments to U. S.	12,500	33,220
Estimated Feb. shipments to Europe,	181,880	132,800
Estimated loadings at Feb. 15th for March despatch to Europe . . .	12,840	26,910
European deliveries, 1st to 15th Feb.	128,000	138,000
Estimated visible supply of stocks, Europe, Feb. 15th	1,014,800	1,040,500

NEW YORK, March 13, 1913.

COTTONSEED OIL AND MEAL

The week has been one of extreme dullness for the trade and today's market was one of the quietest and dullest in the history of the local ring. The total sales today were less than 2,000 barrels and this establishes or nearly establishes a low record for the trade—at least during normal times. Naturally with such conditions prevailing it can be readily assumed that there is little in the way of news interest to report for the market. Even the speculators who have been operating in a small way of late appear to have withdrawn from the market for the time being and every one is marking time.

The consuming demand has been so small that it can be described as practically nil. Manufacturers of compound are taking small lots from the market at current rates and are apparently letting the future take care of itself. The large refiners apparently have more oil on hand than is necessary and have been selling in a small way. These sales have been generally confined to nearby positions but purchases of distant months to cover have been made.

Pure lard has been subject to rather violent fluctuations during the week, a sharp decline occurring with a full recovery noted later. The oil market did not decline in sympathy, as it had not advanced with lard of late, so that the traders here were not influenced by this move. Cotton has also advanced, but this likewise had little effect on oil values. With practically no speculative interest shown and refiners on both sides of the market there is little likelihood of any important developments during the next few days. Underlying conditions will have to change perceptibly before any changes occur.

The crude oil situation continues as tight as ever, in fact oil in Texas is quoted on a higher basis than at this time last week. The mills continue to hold back oil, however, and refiners are not able to pick up anything that can be described as a bargain. A large amount of crude oil is yet to reach the market and those members of the local trade who are inclined to the bearish side of affairs do not believe that the mills will be able to maintain their prices. These same sentiments were expressed weeks ago, yet the mills today are securing prices equal to or higher than those that prevailed then. The season from the viewpoint of crude oil has been a very unusual one, indeed.

The cake and meal situation remains unchanged. Meal prices are still too high to permit of its use as a fertilizer ingredient, but the consumption for feeding purposes is rapidly on the increase and just at the moment sales in the South for this purpose appear to be increasing. Exports of both cake and meal have not been particularly heavy and domestic users are taking care of the material that reaches the market.

GLUES

General conditions governing the glue situation appear to be quite satisfactory and the withdrawals against contracts are somewhat in excess of those of this time last year. Interest at the present time is centered on the possibility of a change in the tariff. The foreign manufacturers have been for several years past working very energetically for a downward revision of duties. The entry of cheap foreign glues and gelatines into this country would seriously affect the domestic trade.

MISCELLANEOUS PACKING HOUSE PRODUCTS

The general provision market advanced today in sympathy with the advance in hogs despite the weakness in grain, and the fact that receipts of hogs at Western points have been heavy. Lard has been subject to frequent fluctuations. A sharp decline on Tuesday forced values way down, but a recovery was later noted and values today are slightly higher than those that prevailed a week ago. At the moment the lard market is inactive. Oleo stearine has advanced one-quarter cent during the interval. Lard compound has pursued an even course and prices were not subject to change during the week. Compound prices are still 3 cents per pound lower than those for pure lard, but operations are limited. At London tallow was unchanged to 3d lower. Locally city tallow was unchanged. Greases are quiet and routine. Competing soap-making oils are about unchanged, although there is a slightly firmer feeling to the linseed oil market.

FERTILIZER MATERIAL INQUIRY

The United States Senate has passed the following resolution, which was introduced by Senator Smith, of South Carolina:

"That the Secretary of Commerce and Labor, through the Bureau of Corporations, be directed to investigate the causes of the advance in the price of ammoniates and nitrates used in the manufacture of commercial fertilizers, and report the findings to the Senate at the earliest practicable time."

BALTIMORE

The Season Early, with Orders So Far in Every Way Satisfactory. Raw Materials Strong. Animal Ammoniates Show Improvement

Exclusive Correspondence to "The American Fertilizer."

BALTIMORE, March 12, 1913.

The fertilizer market has developed rather more activity the last few days. Reports from the various local manufacturers are to the effect that the season is at least two weeks early, and that so far the orders are in every way satisfactory. The activity in the matter of shipments has stimulated the demand for crude materials, and the fact that this same state of affairs is general has strengthened up the crude materials market somewhat, the effect being felt in our local market as well.

Animal Ammoniates.—The tone of this market shows some improvement. There has been a fair amount of trading in spot stocks or for nearby shipment, and the offerings are not as numerous as they have been for some time back. The larger producers, in fact, claim to be well sold up for prompt shipment, and are asking higher prices with each sale. The buyers follow a little slowly and only in proportion to their actual necessities. Sellers' views on futures are strong, with buyers not quite so enthusiastic.

Acid Phosphate.—The market is quiet, with only a fair demand. Producers have liberal supplies, but are not pushing them, as with present prospects it looks as if there will be outlet for all unsold surplus.

Nitrate of Soda.—The market holds strong. There is a rather better inquiry as the season grows, but there would unquestionably be more business if it were not for the high price.

Sulphate of Ammonia.—The market for both foreign and domestic continues about as heretofore. There is a fair inquiry, and the trading in this article is probably augmented somewhat by the high price of nitrate.

Bone Meal.—The demand is small, and business not particularly active; prices are unchanged.

Potash Salts.—With the greater activity in shipments there is a rather better demand for potash salts of all grades, but the offerings of resale lots are not quite so numerous as they have been up to this time.

CHICAGO

Active Demand for Animal Ammoniates with a Rapidly Advancing Market. Buyers Widely Scattered

Exclusive Correspondence to "The American Fertilizer."

CHICAGO, March 11, 1913.

There has been quite an active demand for animal ammoniates during the past week, and quite a good many transactions have been made on a rapidly advancing market, but packers have now apparently advanced prices to the point where buying is being checked, and business is becoming a little more quiet; but stocks are small, and, if the demand continues, prices may be advanced a little further.

The demand is widely scattered, ranging all the way from New England to Louisiana, and Eastern buyers have purchased considerable tankage produced in their own localities.

The demand has been fairly evenly divided between blood and tankage, both having advanced in price. The demand for tankage has been pretty well divided between high-grade and low-grade. There has been but little demand for hoof meal, concentrated bone meal, etc.

ATLANTA

A Heavy Demand for Animal Ammoniates Has Advanced Prices. Cottonseed Meal Not Being Used to Any Great Extent

Exclusive Correspondence to "The American Fertilizer."

ATLANTA, March 10, 1913.

The heavy and steady demand for animal ammoniates the past week has strengthened the market considerably, and prices have advanced from 2½ to 5 points daily for the past few days. The season's business, which will have to be done in a few weeks this year, will not be up to the average from present indications, but what there is of it is having to be handled very rapidly and promptly.

Blood and Tankage Stocks are reported low in the West, and the packers are inclined to hold for their own prices, which they are enabled to do by the heavy demand for quick shipments.

Cottonseed Meal.—A good deal of cottonseed meal is still on the market, and a lot of it is being sold, though it is not being used to any great extent to replace the animal ammoniates.

Nitrate of Soda has held up well in demand, though there has not been any recent advance in price. The market is very firm, however, with no indication of weakening for the present at any rate.

Sulphate of Ammonia is practically sold up, and, while there is still some demand, offerings are scarce and high.

Fish Scrap and Whale Meat are in fair demand, though there is very little being offered, and good prices are being asked.

Potashes are being taken out very rapidly on contract, and a good many new sales in small lots are being made.

Cyanamid.—Some new sales are reported on cyanamid, indicating that there is a pretty fair demand for this material.

Phosphate Rock is attracting little if any interest at all, and there seems to be but little demand for it on this market for the time being.

Pyrites Ore is selling well, and the market is very firm. Some nice sales are reported.

SAVANNAH

Good Spot Demand for Nitrate of Soda with Quantities Scarce. All Materials Generally Very Firm

Exclusive Correspondence to "The American Fertilizer."

SAVANNAH, March 11, 1913.

Nitrate of Soda.—There is a good spot demand for this material at all Southern ports, with quantities very scarce, as most of the vessels arriving carry very small amounts of material not already contracted for. The market continues firm, with advancing tendencies.

Potash Salts.—There is a fair spot demand for this material at all Southern ports, with prices firm.

Fish.—Inquiries are still being received for this material, although there is nothing that can be offered for spot delivery.

Cottonseed Meal.—There is little demand for this material, with prices remaining about the same.

Blood and Tankage.—The market seems to be somewhat stronger, and prices have advanced, most inquiries for these materials being received from interior manufacturers.

Sulphate of Ammonia.—Inquiries for this material are very few, with the market firm.

CHARLESTON

Much Activity and Bright Prospects for an Unusually Good Season. Manufacturers Busy Shipping

Exclusive Correspondence to "The American Fertilizer."

CHARLESTON, March 11, 1913.

Little change has been noted in the market conditions here during the past week. Conditions remain about normal. Manufacturers are now busy getting in material and making shipping arrangements.

The past month witnessed a great deal of activity in all lines of the fertilizer industry, and prospects are bright for an unusually good season.

Nitrate of Soda.—Market very firm, with active demands both here and abroad.

Potash Salts.—The demand for kainit and muriate of potash continues good, and shipments are being forwarded daily.

High-Grade Ground Tankage and Blood.—The demand for these materials is fair. This market seems to be pretty well supplied, and prices show but little change.

Cottonseed Meal.—The demand for cottonseed meal is fair, with prices firm. There has been no material change in the price of meal recently.

Acid Phosphate.—There seems to be very little demand for acid phosphate at this time, and the market in this commodity is quiet.

Pyrites Ores.—The sales of pyrites ores have been very good recently, and the tone of the market firm.

CINCINNATI

Heavy Sales for Prompt or Immediate Shipment Increased Demand for Blood and Tankage

Exclusive Correspondence to "The American Fertilizer."

CINCINNATI, March 11, 1913.

The manufacturers and mixers are evidently finding themselves short on raw material, as sales are reported heavy for prompt and immediate shipments.

Tankage and Blood.—Increasing demand and light stocks have forced up the prices in these materials. Most of the trading has been for prompt and immediate shipments. The stocks in most packing centers have been sold up, and, if the demand for the above deliveries continues, still higher prices will be asked by the packers.

Sulphate of Ammonia.—The material is in good demand, and prices remain unchanged.

Nitrate of Soda.—Stocks on hand are light, with prices firm.

Acid Phosphate.—The market continues dull, with no change either as to prices or volume of business.

Bone.—While some little interest has been shown in this material, buyers and sellers seem too far apart regarding prices for much trading to result.

Cyanamid.—Firm and in good demand, but with little to offer for immediate or prompt shipments.

TENNESSEE

Shipments of Mixed Goods Have Greatly Increased. Car Shortage. Ample Stocks of Raw Materials

Exclusive Correspondence to "The American Fertilizer."

MT. PLEASANT, March 8, 1913.

The shipment of mixed goods, which up to a few weeks ago was considered by the local manufacturers as satisfactory, has in the past week greatly increased. The orders are on hand in large numbers, which cannot be filled owing to the present car shortage. The shipments have not made any notable demand for any particular crude material; on the contrary, there seems to be, for the time being, ample stock supplies on hand.

Nitrate of Soda.—The nitrate of soda market is quiet. Prices remain unchanged. So far as we can learn there are very few shipments being made.

Bone Meal.—The market continues very good. The offerings are in good supply, with prices normal.

Potash Salts.—Potash salts, particularly kainit, are keeping up; however, there are but few orders filled at this place.

Phosphate Rock.—The interest in phosphate rock is good. The present orders cannot be filled owing to the scarcity of cars. Prices remain unchanged.

PHILADELPHIA

All Attention Being Given to Shipment of Mixed Goods. The Materials Market Inactive, But Prices Firm

Exclusive Correspondence to "The American Fertilizer."

PHILADELPHIA, March 13, 1913.

The trade in this section is now very much preoccupied with details pertaining to the shipment of complete brands, and, having heavy stocks of all materials in hand, very little attention has been given to the purchase of additional supplies, as the quantities of materials now in and due on contracts are anticipated sufficient to last for some length of time. Under these conditions we are informed the materials market has been very inactive, and, so far as can be learned, very little new business has been accomplished.

Tankage and Blood on basis of advices from the Western producing centers show an advance, but we understand manufacturers in this section are not affected, as supplies in these lines have been previously arranged for at satisfactory figures.

Ground Bone is reported quiet; the usual buyers in this line are now out of the market, and we have heard of no new business during the past week.

Sulphate of Ammonia is extremely dull; we understand considerable of this article is on hand, but holders expect to have use for same before the end of the shipping season, hence the market is not affected, and quotations hold firm.

Nitrate of Soda is reported unchanged for early arrivals, but we understand distant futures are quoted somewhat lower than prices prevailing for spot and nearby arrivals.

Potash Salts continue to arrive, but the goods are apparently all being taken in by parties who had contracted for same, and practically no inquiries are heard of as new business.

EASTERN OIL AND FERTILIZER COMPANY

The Eastern Oil and Fertilizer Co., Wilmington, Del., has been incorporated under the laws of Delaware, with a capital stock of $500,000, to carry on a general business of commercially treating and reducing fish, oil, guano, scrap, etc. The incorporators are F. D. Buck, George W. Dillman, B. M. Grawl, all of Wilmington, Del.

MATERIALS IMPORTS AT NEW YORK

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, March 13, 1913.

The following imports were noted at this port during the past week:

Fertilizers, n. e. s.—35 bags, "Buffalo," Hull; 15 bags, "Marengo," Hull; 50 bags, "Minneapolis," London; 3,365 bags, "Lapland," Antwerp; 355 bags, "Monviso," Genoa; 595 bags, "City of Sydney," Halifax; 565 bags, "Valesia," Hamburg; 230 bags, "Morro Castle," Vera Cruz; 20 bags, "Mesabe," London; 310 bags, "Antilla," Tampico; 3,365 bags, "Vaderland," Antwerp.

Bones.—785 bags, "Guatanamo," Tampico.

Bone Meal.—1,125 bags, "Valesia," Hamburg; 1,015 bags, "Zaandyk," Rotterdam; 1,000 bags, "Oceanic," Trieste; 560 bags, "Soestdyk," Rotterdam; 500 bags, "Stolzenfels," Calcutta.

Ammonia Sulphate.—535 bags, "Marengo," Hull.

Kainit.—785 tons, "Pretoria," Hamburg.

Phosphate.—1,400 bags, "Michigan," Antwerp.

Superphosphate.—300 bags, "Vaderland," Antwerp.

Soda Nitrate.—27,825 bags, "Chincha," Iquique.

Pyrites.—4,955 tons "Inca," Huelva.

Muriate of Potash.—11,815 bags, "Aragonia," Hamburg; 17,080 bags, "Valesia," Hamburg; 6,160 bags, "Prinz Friederich Wilhelm," Bremen; 11,760 bags, "Pretoria," Hamburg; 1,680 bags, "Amerika," Hamburg; 2,240 bags, "Kleist," Bremen.

Sulphate of Potash.—500 bags, "Kleist," Bremen; 280 bags, "Pretoria," Hamburg; 5,320 bags, "Valesia," Hamburg.

CHARTERING

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, March 13, 1913.

The following fertilizer-carrying vessels were contracted for in the local market during the past week:

Phosphate Rock.—Schooner "Alice May Davenport," 952 tons, from Port Tampa to Baltimore, private terms.

MASSACHUSETTS FERTILIZER BULLETIN

Bulletin 143 of the Massachusetts Agricultural Experiment Station, containing a full report of the Inspection of Commercial Fertilizers in 1912, has just been issued. It contains the complete analysis of 337 different brands of commercial fertilizers, together with 146 samples of chemicals and organic fertilizing materials, and also 26 samples of agricultural lime. These materials were sold in the State by 97 different manufacturers and dealers, all of whom are listed in the bulletin.

Instead of the valuation of the fertilizer, there is published the retail cash cost of an equivalent amount of plant food in unmixed chemicals. An important part of the bulletin is the discussion of the quality of the materials used in mixed fertilizers, especially the quality of the nitrogenous material employed.

WILL ADD FERTILIZER PLANT

It is reported that the South Coast Oil and Fertilizer Company, Port Arthur, Texas, the organization of which was recently reported in these columns, will at a later date establish a fertilizer factory in connection with their fish scrap plant.

REEDVILLE OIL AND GUANO COMPANY

The Reedville Oil and Guano Co., Reedville, Va., has been incorporated with a capital stock of $100,000. The officers are as follows: President, J. G. Haynie; vice-president, Wm. Blundon; secretary-treas., W. B. Crowther.

GENESEE LIMESTONE PRODUCTS COMPANY

The Genesee Limestone Products Co., Mendon, N. Y., has been incorporated with a capital stock of $150,000. The incorporators are John E. Maher, Elen L. Yeomans, Otto F. Kieffer. This company was incorporated under the laws of New York State at Albany, N. Y., on February 28th.

NEW CHICAGO MANAGERS

The Taylor-Wharton Iron and Steel Company announce that H. A. Johann and Martin O'Shaughnessy, who have been in charge of the Chicago and Middle West territory, have resigned, effective March 31st, to engage in other business. The Chicago office of the Taylor-Wharton Iron and Steel Company will be in charge of Geo. R. Lyman and J. R. Bolgiano, with Guy H. Bergen representing the company particularly in the Messabe Range district.

SOIL IMPROVEMENT

Fertilizing the Farm for Greatest Profit. Fertilizer Facts. What Commercial Fertilizer Has Done for North Carolina. Soil Conservation

[The Soil Improvement Committee of the Southern Fertilizer Association have just published a soil improvement bulletin which is a most convincing and logical statement as to the value of liberal fertilization for the greatest profits. The object of the pamphlet, the objects of the Soil Improvement Committee and the objects of the Southern Fertilizer Association are clearly set forth in the introduction to the bulletin.

The first page is embellished with the illustration of a wheel symbolizing the world. The spokes represent the more important industries. The axis is represented by the farmer and the soil, and the foundation upon which this wheel revolves is fertilizers.

The bulletin is an excellent illustration of the educational work of the association, which makes for larger yields of crops and a higher quality. The bulletin in full is as follows. —Ed.]

INTRODUCTION

The object of this pamphlet is to make known the purposes of the Southern Fertilizer Association and to disseminate useful information in regard to its aims and efforts.

An extract from its constitution sets forth explicitly its purposes in the following language:

Objects

"The objects and purposes for which the Association is formed are: To advance the interests of the business in which its members are engaged; to promote agriculture by encouraging the increased use and application of fertilizers, and to disseminate knowledge in respect thereto; to elevate the fertilizer industry by the elimination and prevention of abuses; to advance and promote the establishment and maintenance of all proper usages and customs among the merchants and fertilizer manufacturers, and generally, in respect of any of the foregoing objects and purposes, to contribute to the welfare of the fertilizer business and its allied interests through the employment of such agencies, the adoption of such means and the exercise of such methods as may be prudently commanded and lawfully applied."

Pursuant to the expressed object "to promote agriculture by encouraging the increased use and application of fertilizers and to disseminate knowledge in respect thereto" there has been appointed a

Soil Improvement Committee

whose duty it will be to issue bulletins from time to time containing information of the liveliest interest to the farmer and relating particularly to the proper use of fertilizers, which means the growing maximum crops at a minimum cost. The information so disseminated will come from only the most authentic and disinterested sources, and is to be relied upon.

The object and interest of the farmer is to grow the maximum crop at a minimum cost; the object and interest of the fertilizer manufacturer is to furnish a fertilizer that will grow the maximum crop at a minimum cost; the object and interest of each, therefore, is identical. A failure to accomplish the object means failure in its broadest sense and nothing short of it.

The fertilizer manufacturer has a large portion of his capital invested in his buildings and machinery which, from their shape and arrangements, can be used for no other purpose except the manufacture of fertilizers. The remainder of his capital and frequently a large amount of borrowed money goes into his stocks, freights, labor, etc., and the future use and safety of this vast sum of money depends upon the efficacy of the fertilizer he manufactures, the reputation of his brands and the results they bring under crops.

To Secure Greatest Results

The utility of any article manufactured depends entirely upon its successful application. A plow is an implement of great usefulness. In using the plow, however, much depends on whether it is hitched to a lame or weak, or strong and quick-stepping animal; whether or not the man following it is determined to get the maximum amount of work and is willing to give freely of his own labor to the accomplishment of his object; whether you are plowing in a field full of stumps or free of stumps; in mellow soil or compact soil—as these are all factors that control and limit the usefulness of the plow.

The successful manufacture and sale of any commodity, however great its practical utility, depends entirely upon its proper and successful use, else there would be no demand, hence no sale, and the manufacturer would perforce discontinue his business.

The manufacturer of plows does not need to concern himself in the farmers' knowing when and how to plow; it is an implement of too simple a utility to require such instructions, and can be safely left to the individual farmer to apply according to his necessities and opportunities.

When and How to Use Fertilizers

When and how to use fertilizers, however, is a more intricate problem—one that has to be studied deeply in order to be sure of getting a maximum return on the investment. We say investment advisedly. From a fertilizer standpoint investment means only the outlay of money in a commodity in the use of which the cost of the commodity is returned and in addition thereto a profit realized. A good fertilizer properly used is an investment pure and simple, and it is the aim of the Soil Improvement Committee to impart to you, through these bulletins, the best method of applying fertilizer, the quantity to apply and the grades best suited to different crops and different soils. We are going to tell you how to practice real economy in the use of fertilizers; how best to save the waste products of your farm that have a fertilizing value; how to build up your soil to a high state of productivity while still making the largest and cheapest crops.

We ask your co-operation to the extent of a careful perusal of these bulletins, and solicit your correspondence on any subjects we touch upon that are not thoroughly understood by you.

FERTILIZER FACTS No. 1

A $100,000,000 Loan

"Commercial Fertilizer"—well named, since the commerce of this section is based upon it—is the subject commanding the closest attention of the agricultural South today.

There are two parties vitally concerned in this all-absorbing subject, as in all great contributions which go to hasten agricultural development—the consumer and the manufacturer. Their interest is identical—the ultimate success of the crop. The interest of the consumer lies in his desire to secure value received in the plant food which he is buying in commercial fertilizer. The interest of the manufacturer is to see that the consumer gets the plant food in the right proportion. But, beyond this, the manufacturer is concerned that the buyer does not waste his money in getting fertilizers out of proportion to the needs of his soil and his crops. By this is meant that the consumer does not buy goods with more potash than the plant can use and less ammonia, or *vice versa.*

To Insure Crop Success

The only way to insure crop success is by co-operation, for, after all, the consumer and manufacturer are partners. The consumer must study carefully what each ingredient does for his crop, study the nature of the soil in which each crop is planted, consider what was planted and what the analysis of the fertilizer was that was used last year, also what were the results.

The materials mixed in commercial fertilizer are:

Ammoniates, Termed Nitrogen.—Which give the stalk or body of the growing plant life, strength and vigor.

Phosphoric Acid.—Which gives vitality, growth and health to the fruit of the plant.

Potash.—Which gives body, tone and strength to each.

Study these foods and determine in what proportion they should be used this year on your crops.

In order that the consumer may have these all-essential elements of plant food, best found in commercial fertilizers, the manufacturers make a loan of *over one hundred million dollars annually* to the consumers of the South. (This loan stimulates and assists the growth of a *billion dollars worth of crops* in the South annually.) This loan is advanced in the spring on the faith that repayment is assured in the fall through increased production per acre.

Assisting Boys' Corn Clubs, Etc.

Assistance in upbuilding Southern agriculture must of necessity bring prosperity to the maker as well as the user of fertilizers. Hence they have contributed thousands of dollars annually to boys' corn clubs, girls' canning clubs, educational trains and every other earnest endeavor in the interest of better farming.

Bigger production per acre must be the aim and object of the South.

Labor is scarce and unsatisfactory at best. To cultivate more land will cost more money. The solution of our problem is to *cultivate better* the land now being tilled. To do this satisfactorily and economically, use the *right kind* of fertilizer and plenty of it.

Fertilizer Costs Less than Labor

The manufacturers have invested their capital in their factories, have faith in their goods, faith in the consumer, faith in the growing South, and are here to stay. The partnership is formed, but the manufacturer has more to lose than the consumer. A crop failure is only a temporary setback to the planter. A failure on the part of the manufacturer to deliver *the best goods to be had* means loss of customers and business bankruptcy.

This is the first of a series of articles which will be published by the Soil Improvement Committee named by the fertilizer manufacturers of the South. Others of interest will follow.

FERTILIZER FACTS No. 2

It Is Up To You

The time to make money on your crop is when you are producing it.

The way to make money on your crop is to keep down the costs.

The means by which you can keep down the costs are, first, deep plowing and thorough cultivation; second, a proper fertilization, by which an increased yield per acre will be obtained.

For several years now the price of cotton has been good. Just how much each planter made or lost depends on his cost of producing a bale of cotton.

The South has no monopoly in producing cotton. Forty per cent. of the world's supply is produced abroad. The increased acreage being planted abroad annually is more than the increase in the South. England is now preparing to spend $15,000,000 to aid and assist cotton growing in the Sudan. The only way the South can keep ahead is by keeping the cost of production lower here than abroad, *by securing the maximum yield at the minimum cost.* In Egypt, blessed by a natural fertilizer, the production per acre is increasing. In this country it is decreasing.

Farm Labor as a Factor

Farm labor is a great factor in keeping the production down and the cost up. The only solution is to secure a greater yield per acre, on fewer acres, by the use of carefully chosen fertilizer to fit the needs of the land and by the intelligent cultivation of the reduced acreage.

A farmer who can raise one bale of cotton to the acre, and only raises one bale to three acres, is losing money. At a bale to the acre his cost would be about five cents per pound. At a bale to three acres has cost would not be less than nine cents per pound, and he has undoubtedly lost the profit represented by the difference between these costs.

It has been demonstrated that the use of fertilizer is an investment and not an expense. It not only pays for itself, but in addition pays a handsome profit on the investment.

Intensive Cultivation

It costs no more to cultivate an acre with 600 pounds of fertilizer on it that produces a bale of cotton than to cultivate an acre with 200 pounds of fertilizer on it which produces one-third of a bale to the acre. With the extra expense for 400 pounds of fertilizer the cost of production is reduced from nine cents to five cents per pound.

In addition to his cotton he should plant an acreage in food crops that will enable him to live at home, and by so doing keep at home the millions of dollars that annually have been going out of the State.

Plow deep and get your land in condition to hold moisture. Prepare it carefully and get it in fine tilth to receive your crop.

The planter who can tell his banker or supply man that he produces a bale to an acre has three times the credit rating of the one-third-of-a-bale-to-the-acre man.

Your profits begin with your planting, so *it is up to you.*

FERTILIZER FACTS No. 3

Back to the Soil

The press and the public have had much to say about the return to the farm. And well they may. In the language of the old song: "The farmer is the man who feeds us all." The soil is the source of all wealth. Without agriculture there can be no true and lasting riches. Any increase in the world's wealth must have its origin on the farm, in the land. To get the largest yield at the least cost is the effort of today. This is shown by the great interest and wonderful results of the boys' corn clubs the country over.

Anything that will increase the yield per acre is a benefaction. The man or set of men who bring this about are benefactors.

According to the Manufacturers' Record: "It is doubtful if any other country in the world ever had as much money in agricultural operations as the South made from the early part of the nineteenth century to 1860, of course in the proportion to the population."

It was during this period the farm lands of the South were virgin and rich in those elements so necessary to plant life.

Returning Plant Food to the Soil

The next great increase shown in the agricultural wealth and general prosperity was during the period between 1899 and 1909, when the value of twenty leading crops of the South increased from $901,017,000 to $1,710,541,000, a gain of 87.9 per cent. During these ten years the use of fertilizer to return to the soil those elements so necessary to plant life, and which had been exhausted, was increased from 1,368,000 tons in 1899 to 3,144,000 tons in 1909.

No means is at the farmer's hand which would equal that of proper fertilization for increasing the output of his land and his own profit.

Liebig, the German chemist, sixty years ago showed that every growing crop removed from the soil in varying quantities the three essential chemical substances so necessary to plant life—nitrogen (ammoniates), phosphoric acid and potash.

Farming in Germany and France

This fact is now recognized in Germany and France as a basis of rental values. Before the lease is signed the soil of the farm about to be rented is analyzed, and the tenant agrees to pay for all plant food withdrawn from the soil during his lease and not replaced, as shown by a subsequent analysis at the time that he gives up the farm. And in return the landlord agrees to repay the tenant for any plant food in the soil in excess of what was there when the tenant leased the farm.

To furnish these elements of nitrogen, phosphoric acid and potash, best found in machine-mixed commercial fertilizers, the manufacturers search the ends of the earth. The potash salts are brought from Germany; nitrate of soda from the rainless plains of Chile; bird excretions from the islands of the sea; sulphate of ammonia from England and Germany; dried blood from Argentine, and bones from India, by the thousands of tons.

Developing Plant Food in Quantity

So great has been the demand and wonderful the success through the use of commercial fertilizers that sources of supply of these all-essential elements near home are being developed. Millions of tons of phosphate rock are annually mined in Florida and Tennessee. The cotton oil mills of the South and slaughter houses of the West contribute a large quota of the ammoniates now used, and even Niagara the wonderful has been harnessed to catch nitrogen from the air.

The manufacturers are spending millions to make commercial fertilizers available and at a low cost for the benefit of the consumer of today, who realizes more than ever that fertilizer costs less than labor.

It is through the intelligent selection and generous application of fertilizer that the maximum yield per acre is secured at a minimum cost per unit of measurement.

The fertilizer manufacturers are at the head of the great movement which has as its slogan the subject of this talk, "Back to the Soil," for they are causing to be put back into the soil that which causes the farmer to get maximum yield from his soil at the minimum expense.

WHAT COMMERCIAL FERTILIZER HAS DONE FOR NORTH CAROLINA

According to Dr. B. W. Kilgore, State Chemist and Director of Test Farms, North Carolina Department of Agriculture, from 1866 to 1895 the yield of lint cotton per acre in North Carolina averaged 172 pounds. From 1896 to 1910 the average production of lint cotton per acre was 204 pounds. An increase of 32 pounds per acre in that time gave the grower an accumulated profit of $3.20 an acre with cotton at ten cents a pound, and $4.80 an acre with cotton at fifteen cents a pound.

Among the factors contributing to this increase, says Dr. Kilgore, was the better and more intelligent and intensified fertilization or feeding of the crops. In order to demonstrate practically what could be done through the use of intensive and intelligent fertilization, Dr. Kilgore conducted a five-year test on a farm the fields of which were made up of a red clay loam soil.

When No Fertilizer Was Used

It was shown that, when no fertilizer was used on an acre of ground, 176.6 pounds of seed cotton were produced, with no profit to the grower.

With 200 pounds of commercial fertilizer used per acre, 656.5 pounds of seed cotton were produced, with a profit of $16.00 per acre, a profit of $8.00 per 100 pounds of fertilizer after the fertilizer was paid for.

With 400 pounds of commercial fertilizer used per acre, 912.9 pounds of seed cotton were produced, a profit of $27.59 per acre, or $6.89 per 100 pounds of fertilizer used after the fertilizer was paid for.

When 600 pounds of fertilizer was used, 1,008.9 pounds of seed cotton were produced, at a profit of $32.30 per acre, or $5.38 per 100 pounds of fertilizer used after the fertilizer was paid for.

When 1,000 pounds of commercial fertilizer per acre were used, 1,180.9 pounds of seed cotton were produced, at a profit of $36.86 per acre, or $3.68 profit per 100 pounds of fertilizer after the fertilizer was paid for.

What This Test Proved

From this test it was shown that the average profit from the use of fertilizer was $5.63 per 100 pounds of fertilizer after paying for the fertilizer. The fertilizer not only paid for itself, but *paid a handsome profit on the investment* besides.

The test was conducted with a fertilizer which was thought to be the correct one for this soil, but it was shown afterward that the fertilizer used was not the kind that would produce the most profitable return. So from this it is to be seen that the test was a most fair one.

What this fertilization should be, for the most profitable production of cotton and the betterment of the land, are the subjects of bulletins which the Department of Agriculture in North Carolina have subsequently issued.

The figures used in the calculation by Dr. Kilgore were the current fertilizer prices to farmers, and seed cotton at 4½ cents per pound, on a basis of cotton's "thirding" itself, is equal to 11 cents per pound for lint and 30 cents per bushel for seed.

Soil of Only Average Grade

The soils on which these experiments were conducted are not much if any better than the average cotton lands of the State. There is an abundance of land as good and better than these in the State for growing the cotton crop.

The average annual yield of cotton in the State of North Carolina in the five years (1906 to 1910) was 215 pounds of lint, or 0.43 of a bale per acre. By using 800 pounds of fertilizer per acre, on a basis of the test, this yield could be more than doubled, or else produced on less than one-half the area of fairly good cotton land, as labor and trade conditions might direct; or by applying 1,000 pounds of good fertilizer per acre to only good cotton land a 500-pound bale of lint cotton could be made annually per acre on an average. It is true that the land on which the work was conducted had good preparation and cultivation, good seed and good fertilization, but not as economical fertilization as it is now possible to have on a general crop of cotton. However, this test proved that preparation, cultivation and seed will not take the place of needed plant food.

Cost of Production Varies

Another fact brought out in this test was that the cost of producing cotton per acre varies from $25.00 to $35.00, according to year, land, amount of fertilizer, etc. The difference in cost, outside of fertilizer, for preparing, cultivating and harvesting and ginning the cotton on one acre will be very small, regardless of yield.

The North Carolina farmer who produced only an average crop of 0.43 bale per acre during the five years under discussion has only gotten fair returns for the cost of production; the one growing less has not gotten the worth of his labor; while the farmer producing larger yields has obtained profits in proportion to the increased acreage yield.

Not Necessary to Increase Acreage

These facts make it plain that it is not necessary to increase the acreage production of cotton (and this applies also to other crops) merely to increase the total cotton crop, but to give the farmer larger returns from his land and labor used in cotton growing and to leave him more time and land for the production of other crops.

In order to demonstrate the possibilities of cotton production through intelligent and intensive fertilization, Dr. Kilgore has evolved the following interesting statement:

"1. In round numbers there were 1,500,000 acres planted in cotton in North Carolina in 1911, and the amount of fertilizer used per acre was likely 300 to 400 pounds. If this acreage were reduced in 1912 to 1,000,000 (or 33⅓ per cent.), and the same total amount of fertilizer used on cotton as in 1911, there would be used 450 to 600 pounds per acre. The total cotton crop for the State, under average conditions, could be expected to be 700,000 to 800,000 500-pound bales from this course, with a profit of $15 to $20 per acre, or a total of $15,000,000 to $20,000,000 net returns for the cotton crop of the State.

If the Acreage Be Reduced One-half

"2. Should the acreage be reduced from 1,500,000 to 750,000 (or 50 per cent.), and the same total amount of fertilizer used for cotton in 1911 be applied in 1912, it would give 600 to 800 pounds per acre, and there could be expected under average conditions a cotton crop of 600,000 to 675,000 500-pound bales, with a net profit of $20 to $25 per acre, or

$15,000,000 to $18,750,000 for the State's cotton crop over the cost of production.

"3. Should the acreage be reduced from 1,500,000 to 750,000 (about 50 per cent.), and the total amount of fertilizer used on cotton in 1911 be reduced 25 per cent., this would give 450 to 600 pounds of fertilizer to the acre, and there could be expected under average conditions a yield of 525,000 to 600,000 bales, with a profit of $15 to $20 per acre, or $11,250,000 to $15,000,000 for the State's cotton crop over cost of production.

"4. With the reduction of the acreage to any amount, and the use of the same average fertilizer application as for the last five years per acre, there can be expected a yield of 0.4 to 0.6 bale per acre, with a lower yield barely if actually meeting the cost of production, and the larger yield giving a much smaller net return than that following a course which would give larger acreage yields.

If Fertilizer Consumption Is Reduced

"5. With the reduction of the acreage to any amount, and a reduction of the fertilizer application below what it has averaged for the last five years per acre, there can be expected a yield of less than 0.4 bale per acre, depending on the amount of reduction of the fertilizer application, unless plant food is added in other ways to make up for the deficiency, and this is not, of course, impossible for 1912. The returns from a cotton crop made on this basis would be less than the cost of production.

"For the cotton farmer who is making a hundred bales the most important question is not that he has made a hundred bales of cotton, but it is whether they were produced on 100 acres, 200 acres or 300 acres. If on 300 acres, in the light of the last five years' experience in cotton growing he has not gotten the cost of production; if on 200 acres, the profit has been around $3 to $5 per acre; and if on 100 acres, the profit has been around $29 per acre."

What has been proven in the State of North Carolina is true in every other cotton-growing State.

The statement of the test farm can be verified by you at home. Commercial fertilizer did it.

SOIL CONSERVATION

Conserving the soil means, in the first place, the saving of the soil from being washed away and from being worn out by constant cultivation and cropping, from checking out its richness without making any return. If you have $10,000 in a bank and keep on drawing checks on it without making any deposits the time will soon come when your checks will be dishonored, "turned down," with the cashier's notice on the back, "Not sufficient funds." What then? Why you are just broke and ready to go into bankruptcy.

But conservation means something more than saving what the soil already has. It means also to add to its share of plant food, just as you would make deposits in the bank, always making heavier deposits in it than the amount of the checks you draw on it, thus causing your credit balance to increase constantly instead of constantly decreasing. That is the logic of farming, just as it is in any other business—*always put in more than you take out.*

What Is a Rich Soil?

The richness of a soil, other things being favorable, depends on the depth and quantity of the substance that scientists call *humus,* but which I will call decayed or rotted leaves, roots, nuts, etc., which have accumulated on the land. It is what gives the top soil its dark color, compared with the sub-soil. Formerly it was all alike—sub-soil and top soil. That is nature's way to make a top soil. The farmer should adopt nature's own methods, improve upon them and supplement them.

How to Save (Conserve) the Soil

First, by preventing it from washing away. This is sought to be done by terracing, hillside ditching, deep plowing and level rows. But these methods will not be here discussed. We are assuming that every farmer knows that he should not let his top soil be washed away, thus gradually reducing it to its condition of ages ago. But not every farmer realizes the ways and means by which he may add vegetable matter that contains so much plant food to the soil. He does not consider the almost and sometimes altogether wasted materials for soil building and soil enriching that abound more or less on every farm.

Stable Manure

The first thing one thinks of in this connection is *stable manure,* the fundamental resource on every farm that works horses and mules, raises cattle and hogs and poultry. Part of the richness of the soil is checked out by the crops. Some of the richness is sold off in the form of cotton lint, cotton oil, butter, beef, pork, etc., but by far the greater part goes into the manure, and this manure is what the farmer should save to the uttermost, and not only save, but increase its amount by every means in his power. One of the most obvious ways to increase it is to raise more live stock, more grain and forage to feed them.

The live stock, such as cattle, hogs, chickens, etc., should be fed to fatness and sold off the farm. The manure from well-fed cattle fed on cottonseed meal and hulls should be worth to the farmer well nigh all that the meal consumed could have sold for in the market, and the receipts from the animals sold off would be very largely clear profit. It is a fact that the manure from fattening cattle on cottonseed meal and hulls—mind you, solid and liquid, carefully saved and properly handled—is worth all that the meal costs, and the farmer gets as profit the flesh put on the beef cattle and the butter from the milch cows. But don't feed cotton seed—feed the cottonseed meal and hulls.

Materials Going to Waste

Look at the leaves and twigs from the trees in and around the farmer's yard. They are rich in plant food and humus-making material (humus, you remember, is rotted vegetable and animal matter). A ton of dry oak leaves is about equal in plant food value to a ton of average stable manure. So when you add a ton of such leaves to a ton or more of stable manure (in the stable or lot) you are not reducing the strength of the manure so much as you are adding to the quantity of the whole. I have never seen too much litter of this sort used for littering a stable lot. Look at the forests near by, the surface covered with leaves that have fallen and have been falling for ages, making the soil of the forest richer and richer. Gather these leaves—the trees will take care of themselves—and haul to your stable and stock yards, to be walked over, trodden down, rooted up by hogs, and after a few months haul out and scatter in your furrows. Look about you, Mr. Farmer! Richness is lying around loose, littering the road, the lawn, the hedges and fence corners, the nearby roadway. Get these into your barnyard, or pile them into broad pens, sprinkle with a little slaked lime, and keep moist, but not leaching.

Ashes and Hen Roosts

What about ashes? The good wife, who generally bosses the garden and the fowl yard, knows that there is a very close relation between ashes and chicken manure and the garden and flower yard, and she will doubtless see that all are utilized. Chicken manure may be gathered up three times a week and put in barrels. Don't put lime with animal manure of any sort. A word of caution: Do not let your stable manure—that from the stalls—lie out in loose piles, exposed to sun and winds and bleaching rains. If not ready to haul out to the fields, pile in compact heaps or pens and put a rough board or other covering over the top. It should be kept moist, but not leaching. Don't let it get hot enough to cook an egg.

The Conclusion of This Whole Matter

I have often said, and I steadfastly believe, that an acre of soil may be literally scraped off by means of a road scraper down to the red clay itself, and then made more productive than it ever was by sowing in cowpeas with 250 to 300 pounds of commercial fertilizers to start it the first year, and returning to it the manure produced by a fattening animal fed on the cowpeas, hay and other crops grown on that acre. This is a bold statement, but I believe it firmly, not stating the time, but in less than ten years. That is the way old Dame Nature makes rich soil; but, having plenty of time, she has not worked in a hurry. That isn't her way.

R. J. REDDING.

Griffin, Ga., Feb. 1, 1913.

RATES ON COTTONSEED TO BE MAINTAINED

The Interstate Commerce Commission has ruled that the through rate and joint rates now in effect on shipments of cottonseed moving from points on the Missouri, Oklahoma and Gulf Railway in Oklahoma to Little Rock, Ark., via Rex and the Missouri Pacific Railway, should be continued for the future.

These rules have been maintained in the past, but the Missouri Pacific Railway Company, by its Tariff Supplement 5 to I. C. C. A 2009, proposed to cancel these rates. When this tariff was filed the commission was advised that these advances in rates would seriously affect shippers who operated crushing mills in Little Rock, and the tariff was suspended pending investigation.

The commission decided that the present schedule on cottonseed from these Oklahoma points to Little Rock were just and reasonable maximum point rates, and that any rates in excess would be unjust, unreasonable and unlawful. Carriers were instructed to file cancellation of the tariff under suspension.

TO INVESTIGATE SOUTH CAROLINA PHOSPHATE INDUSTRY

The State Legislature of South Carolina has appointed a committee, consisting of Messrs. Wilburn, McQueen and Means, to investigate the practicability of mining deposits of phosphate and limestone, owned by the State, with convict labor.

IMPORTS AND EXPORTS OF FERTILIZER MATERIALS

The following is the Government report of imports and exports of fertilizers for eleven months ending November 1911 and 1912:

IMPORTS OF MERCHANDISE

Articles and Countries	November—				Eleven Months Ending November—			
	1911		*1912*		*1911*		*1912*	
	Quantities	*Values*	*Quantities*	*Values*	*Quantities*	*Values*	*Quantities*	*Values*
		Dollars		*Dollars*		*Dollars*		*Dollars*
Bones, hoofs, horns, unmanufactured...	....	138,636	....	71,593	....	925,085	....	894,167
Ammonia, sulphate of ....lbs.	13,191,589	374,729	20,478,599	618,418	164,113,474	4,350,258	106,036,267	2,962,669
Muriate of potash ....lbs.	27,005,680	415,493	40,089,273	629,205	435,550,008	6,573,500	445,975,469	6,683,073
Sulphate of potash ....lbs.	5,133,874	96,456	15,915,431	294,312	101,395,727	1,867,787	90,620,483	1,653,113
Nitrate of potash, crude........lbs.	....	....	117,236	3,922	7,458,659	248,044	6,494,450	193,670
Nitrate of soda ....tons.	24,984	735,611	62,329	2,087,798	485,287	14,693,450	466,441	15,937,846
Sulphur or brimstone, crude ....tons.	613	10,396	1,934	43,961	20,741	373,147	26,885	494,778
Bone dust and bone ash[1]........tons.	1,694	41,425	1,735	40,382	13,656	326,327	30,730	756,567
Guano........tons.	5,574	131,242	6,077	95,494	27,278	563,828	17,126	285,453
Kainit ....tons.	33,017	219,259	42,057	190,418	151,198	810,684	446,893	2,086,544
Manure salts[2]........tons.	13,738	114,905	21,794	274,469	459,177	2,875,153	158,006	1,656,828
All other fertilizers	....	201,435	....	191,176	....	4,778,568	....	3,086,349
Sulphur ore with + 25% sulphur.....tons.	65,958	222,526	79,584	332,658	929,549	3,494,787	871,948	3,486,516

EXPORTS OF DOMESTIC MERCHANDISE

Articles and Countries	November—				Eleven Months Ending November—			
	1911		*1912*		*1911*		*1912*	
	Quantities	*Values*	*Quantities*	*Values*	*Quantities*	*Values*	*Quantities*	*Values*
Sulphur or brimstone, crude........tons	54	1,137	6,791	124,071	28,085	544,899	56,422	1,049,839
Phosphate rock, not acidulated:								
High-grade hard rock[3]........tons	88,467	630,111	36,616	366,160	1,160,956	8,605,682	[4]218,165	[4]2,181,650
Land pebble[3]........tons			54,239	310,784			[4]329,969	[4]1,938,098
All other[3]........tons			82	248			586,086	4,319,695
All other fertilizers........tons	2,698	82,567	8,517	196,625	50,099	1,586,131	69,343	1,895,799
Exported to—								
Belgium	9,600	70,800	7,718	57,078	92,923	646,145	121,324	826,889
France........	....	....	10,634	64,650	116,466	722,228	113,511	689,462
Germany	9,400	72,700	34,474	281,212	291,581	2,504,664	315,055	2,734,528
Italy	1,600	9,600	6,350	40,825	97,280	624,080	91,017	597,480
Netherlands........	8,230	72,300	3,000	30,000	151,515	1,212,980	153,678	1,203,280
United Kingdom	12,326	94,085	19,591	130,203	165,239	1,234,726	162,036	1,160,360
Other Europe	26,692	185,660	9,215	78,766	140,960	1,040,149	123,505	935,672
Canada........	1,914	25,503	3,724	42,945	24,751	446,188	35,728	651,423
West Indies and Bermuda	959	31,635	3,791	106,671	25,921	1,011,471	31,748	1,042,789
Japan........	20,256	142,448	246	15,806	102,166	653,433	52,259	348,736
Other countries	188	7,947	716	25,661	2,253	95,749	3,702	145,123
Cottonseed meal ....lbs.	227,022,331	2,996,716	159,726,133	2,159,329	852,293,276	10,904,159	1,022,061,550	13,765,634

EXPORTS OF FOREIGN MERCHANDISE

Articles and Countries	November—				Eleven Months Ending November—			
	1911		*1912*		*1911*		*1912*	
	Quantities	*Values*	*Quantities*	*Values*	*Quantities*	*Values*	*Quantities*	*Values*
Ammonia, sulphate of........lbs.	....	....	....	....	....	....	357,600	11,949
Muriate of potash ....lbs.	56,000	950	225,430	3,441	1,767,632	33,355	3,045,630	53,792
Sulphate of potash........lbs.	....	....	....	....	159,875	3,855	770,200	17,533
Nitrate of potash, crude ....lbs.	....	....	79,285	3,555	639,996	26,048	438,992	13,768
Nitrate of soda........tons.	1,191	51,287	1,319	70,296	6,554	285,290	8,619	427,012
Sulphur or brimstone, crude........tons.	....	....	1	29	....	....	1,015	20,314
Bone dust and bone ash[1]........tons.	5	117	....	....	5	117	100	2,576
Manure salts........tons.	....	....	....	....	211	2,982	....	....
All other fertilizers	....	1,803	....	19	....	7,640	....	6,222

[1] Included in "All other fertilizers" prior to July 1, 1911
[2] Includes kainit prior to July 1, 1911
[3] Not separately stated prior to July 1, 1912
[4] Figures cover period since July 1st

TECHNICAL REVIEWS

By THOMAS COULSON PINKERTON, A. B., B. S.

[NOTE.—This department has been established for the publication of reviews and abstracts of technical, scientific and general articles that are of interest to the fertilizer industry. It will be conducted by Thomas Coulson Pinkerton, analytical and engineering chemist, Philadelphia, Pa.

We will be pleased to receive from our readers, for review in this department, any bulletin, article, book or paper that they think would be of interest and value to the fertilizer industry.—ED.

Seaweed, Potash and Iodine.—The Chemical Engineer, Feb., 1913.

A letter by Henrik Knudsen in reply to an article by F. K. Cameron criticizing Mr. Knudson's estimates as to the cost of preparing potash salts from kelp. The author claims that the seaweeds of the Pacific coast cannot come anywhere near supplying the needs of the United States for potash, which amounts to 1,250,000 tons per year. He says the Japanese factories, which are now producing about 100,000 tons of potash per year, have difficulty in obtaining a sufficient supply of seaweed to keep up this production.

In Scotland and Norway the kelp which is thrown up on the beach by storms is carted to the fields and burned. The ash contains 26 to 35 per cent. K_2O, and is sold for about $22 per ton to the fertilizer manufacturers.

Co-operative Experiments in Alfalfa Culture.—Rhode Island Exp. Station. Bulletin No. 152. Kingston, R. I.

A detailed report of 52 experiments with alfalfa culture in Rhode Island. It is interesting to note the large amounts of fertilizer used in these experiments. The usual practice is to use 90 pounds nitrate of soda, 600 pounds acid phosphate and 300 pounds muriate of potash per acre the first year; the second year 500 pounds acid phosphate and 300 pounds high-grade sulphate of potash are applied as a top dressing. Two and one-half tons of ground limestone or its equivalent were applied per acre. The soils were inoculated either with soil from another alfalfa field or with artificial cultures. Yields of 11 tons of field-cured crop are reported, although the average yield is less than one-half of this amount.

NEW CORPORATIONS

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, March 5, 1913.

The records of the Corporation Trust Co. here show the formation of the following companies:

Kankakee Fertilizer Co., Indianapolis, Ind. Capital $5,000.

B. Campbell & Co., Inc., Seacliff, N. Y. Capital $50,000. Fertilizer dealers.

Colbert County Oil and Fertilizer Co., Tuscumbia, Ala. Capital $50,000.

Alaska Fertilizer and Fish Co., Los Angeles, Cal. Capital $500,000.

Standard Whaling and Fishing Co., Ltd., Vancouver, B. C. Capital $1,500,000.

English Fisheries, Ltd., Vancouver, B. C. Capital $50,000. Fish manure plant.

Natashquan Fisheries, Ltd., British Columbia. Capital $50,000. Fish manure.

North Side Packing and Provision Co., Chicago, Ill. Capital $10,000.

Canada Casing Co., Ltd., Montreal, Quebec. Capital $200,000. Slaughter-houses, etc.

Hamilton County Packing Co., Indiana corporation, increased capitalization $65,000.

Stanbridge Packing Co., Winnipeg, Manitoba. Capital $100,000. Slaughter-houses, etc.

Carondelet Packing Co., St. Louis, Mo., increase in capitalization from $60,000 to $120,000.

Bimbler & Co., Newark, N. J. Capital $150,000. Slaughtering.

West Packing Co., Wellsburg, W. Va. Capital $105,000.

Farmers Packing Co., Delaware corporation. Capital $2,000,000.

Stonemeal Products Co., Springfield, Mass. Capital $50,000.

CORN AND COTTON PRIZES

The Camden Oil and Fertilizer Company, Camden, Ark., has offered a prize of $100 for the best acre of cotton grown within 25 miles of Camden, and also a prize of $50 for the best acre of corn grown within the same radius.

NEW INDIA COMPANY

A company has been organized at India, under the style of the Bombay Chemical Industries, Limited. The chief business of the company will be the manufacture of sulphuric acid.

51.65
AM.

"THAT MAN IS A BENEFACTOR TO HIS RACE WHO MAKES TWO BLADES OF GRASS GROW WHERE BUT ONE GREW BEFORE"

SUPPLEMENTAL BULLETIN OF THE AMERICAN FERTILIZER

A MAGAZINE DEVOTED EXCLUSIVELY TO THE COMMERCIAL FERTILIZER INDUSTRY
AND ALL ITS ALLIED INDUSTRIES

Vol. XXXVIII PHILADELPHIA, MARCH 29, 1913 No. 6

FLORIDA PHOSPHATES

Production of Phosphate Rock During 1912. The Operating Companies. Production and Shipments for Five Years

By E. H. SELLARDS, Ph.D., State Geologist of Florida.

The production of phosphate rock in Florida which has steadily increased during the past several years shows according to statistics collected by the State Geological Survey a further increase during 1912. The output for 1911 was 2,494,572 long tons, while during 1912 the output as reported to the State Geological Survey by the producers was 2,579,865 long tons, an increase of nearly one hundred thousand tons. The increase occurred in both the hard rock and pebble mines. It was greatest, however, in the hard rock mines, this being the reverse of the preceding few years during which the increase had been most rapid in the pebble mines. Thirty companies in all were engaged in mining phosphate in Florida during 1912. Of these fourteen companies were mining hard rock phosphate while sixteen companies were mining pebble phosphate.

The foreign shipments of phosphate rock from Florida during 1912 amounted to 1,203,005 tons. The amount consigned for domestic shipment as reported by the producers, was 1,219,927 tons. It thus appears that approximately one-half of the phosphate mined in Florida is used in the United States. Hard rock phosphate is said to have sold at the mines during 1912 at about $6.00 per ton. Pebble phosphate sold at the mines at $2.75 to $4.50 per ton depending upon the grade.

Hard Rock Phosphate

Notwithstanding a season of unprecedented rain the mining of hard rock phosphate progressed actively during 1912 resulting in a decided increase in production over the preceding year. The production of hard rock during 1911 in Florida was 474,094 tons while during 1912 there was mined 536,379 tons. The removal of overburden by hydraulics is becoming very general in the hard rock section and has been an important factor in the increased production of rock. Electric lighting and power has made it possible to introduce day and night shifts in the Withlacoochee River mines, one or two plants near Dunnellon having been so operated during 1912. The total number of plants mining hard rock phosphate at the beginning of 1912 was forty-three. Some of these worked out deposits or for other reasons closed down, while several new plants opened up. Forty plants were operating in the hard rock section at the close of the year.

The domestic shipments of hard rock phos-

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phate during 1912 amounted to 15,425 tons, of which 10,449 tons were consigned for use in Florida. The amount of hard rock consigned for export, as reported by the producers, was 473,639 tons, as against 462,072 tons during 1911. The amount of hard rock phosphate actually loaded for shipment during 1912 at the various ports was 470,354 tons.

Pebble Phosphate

The production of pebble phosphate during 1912 shows a slight increase over that of 1911. The output of pebble for 1911 was 2,020,478 tons while during 1912 the output was 2,043,486 tons. The number of plants engaged in mining pebble phosphate in Florida during 1912 was sixteen, although several mines are frequently worked from one plant. The overburden from the pebble rock is removed by steam shovel or by hydraulics. The rock itself is mined by hydraulics or by steam shovel. Many of the pebble mines run day and night shifts.

The amount of pebble phosphate consigned during 1912 for domestic use, as reported by the producers, was 1,204,502 tons, of which 32,425 tons were consigned for use in Florida. The amount of pebble rock consigned for export during 1912 as reported by the producers, was 682,232 tons. The amount of phosphate actually loaded and cleared for shipments through the several ports during the calendar year 1912, as reported in The American Fertilizer, January 25, 1913, was 732,651 tons, from which it appears probably that a small amount of phosphate sold by the producers to parties in the United States and hence reported by them as domestic shipments, was subsequently exported. The amount of phosphate actually loaded at the ports is used in giving the total exports. The statistics on the production of phosphate rock have been obtained direct from the producers and are complete for all plants operated in Florida.

Phosphate Companies Operating in Florida During 1912

Amalgamated Phosphate Co., Baltimore, Md., and Chicora, Fla.
Armour Fertilizer Works, Bartow, Fla.
Peter B. and Robert S. Bradley, Boston, Mass., and Floral City, Fla.
J. Buttgenbach & Co., Holder, Fla.
Camp Phosphate Co., Ocala and Dunnellon, Fla.
Central Phosphate Co., Dutton, Fla.
Charleston, S. C., Mining and Manufacturing Co., Charleston, S. C., and Ft. Meade, Fla.
Compagnie Generale des Phosphates de la Floride, Paris, France, and Pembroke, Fla.
Coronet Phosphate Co., Lakeland, Fla., and New York.
Cummer Lumber Co., Jacksonville and Newberry, Fla.
The Dominion Phosphate Co., Bartow, Fla.
The Dunnellon Phosphate Co., Rockwell, Fla.
Dutton Phosphate Co., Gainesville, Fla.
Florida Mining Co., 165 Broadway, New York, and Mulberry, Fla.

Summary of Production and Shipment of Florida Phosphate for the Years 1908, 1909, 1910, 1911 and 1912 (Long Tons)

	1908	1909	1910	1911	1912
HARD ROCK:					
Production	768,011	527,582	392,088	474,094	536,379
Exported	631,001	496,645	461,353	462,072	470,354
Domestic	9,900	17,456	18,745	16,723	15,425
Total shipments	640,901	514,101	480,098	478,795	485,779
PEBBLE ROCK:					
Production	1,150,000	1,334,569	1,637,709	2,020,478	2,043,486
Exported	470,270	509,341	606,110	703,589	732,651
Domestic	421,781	819,701	995,728	1,274,056	1,204,502
Total shipments	892,051	1,329,042	1,601,838	1,977,645	1,937,153
PEBBLE ROCK AND HARD ROCK COMBINED:					
Production	1,918,011	1,862,151	2,029,797	2,494,572	2,579,865
Exported	1,101,271	1,005,986	1,067,463	1,165,661	1,203,005
Domestic	431,681	837,157	1,014,473	1,290,779	1,219,927
Total shipments	1,532,952	1,843,143	2,081,936	2,456,440	2,422,932

Total phosphate produced 1908 to 1912 inclusive	10,884,396 tons
Total phosphate exported 1908 to 1912 inclusive	5,543,386 tons
Total domestic shipments 1908 to 1912 inclusive	4,794,017 tons
Total recorded shipments 1908 to 1912 inclusive	10,337,403 tons
Total phosphate produced in Florida from 1888 to 1912 inclusive	23,280,127 tons

Florida Phosphate Mining Corporation, Norfolk, Va., and Bartow, Fla.
Franklin Phosphate Co., Newberry, Fla.
Holder Phosphate Co., Ocala and Inverness, Fla.
International Phosphate Co., 27 State St., Boston, Mass., and Ft. Meade, Fla.
Interstate Chemical Corporation, Charleston, S. C., and Bowling Green, Fla.
Istachatta Phosphate Co., Istachatta, Fla.
Mutual Mining Co., Savannah, Ga., and Newberry, Fla.
Palmetto Phosphate Co., Baltimore, Md., and Tiger Bay, Fla.
The Phosphate Mining Co., 55 John St., New York, and Nichols, Fla.
Pierce Phosphate Co., New York, and Pierce, Fla.
Prairie Pebble Phosphate Co., New York, and Mulberry, Fla.
Schilman & Bene, Ocala, Fla.
The Southern Phosphate Development Co., Ocala and Inverness, Fla.
Standard Phosphate Co., Christina, Fla.
State Phosphate Co., Bartow, Fla.
T. A. Thompson, Neals, Fla.

MATERIALS INTO ITALY

The imports of fertilizer materials into Italy for the past two years were as follows:

	1912—Tons	1911—Tons
Tunisian Phosphate	366,518	341,085
Algerian Phosphate	23,092	31,202
American Phosphate	76,000	91,078
Phosph. of other countries	534	15,677
Total	466,144	479,042
Basic Slag	118,190	114,149
Nitrate of Soda	54,701	59,635
Nitrate of Potash	461	344
Sulphate of Ammonia	21,190	20,320
Sulphate of Potash	13,466	9,493
Bones	4,193	3,340
Guano	191	101
Miscellaneous	19,700	14,713

ESTABLISHING NITRATE AGENCIES IN CHILE

The Chilean Government has established agencies in different parts of the agricultural sections of the country for the distribution of nitrate to the farmers, with the result that its use as a fertilizer material has increased from 1,551,000 pounds in 1908 to 7,694,000 pounds in 1911, but with good results. To aid in this work, the Government appropriates seven or eight million dollars in gold annually.

TECHNICAL REVIEWS

By THOMAS COULSON PINKERTON, A. B., B. S.

[NOTE.—This department has been established for the publication of reviews and abstracts of technical, scientific and general articles that are of interest to the fertilizer industry. It will be conducted by Thomas Coulson Pinkerton, analytical and engineering chemist, Philadelphia, Pa.

We will be pleased to receive from our readers, for review in this department, any bulletin, article, book or paper that they think would be of interest and value to the fertilizer industry.—ED.

Wedge Roasting Furnace with External Fireboxes.—Eng. and Min. Jour., March 8, 1913. New York.

United States Patent No. 1,040,071, taken out by Utley Wedge, is for a roasting furnace of the Wedge type, but with external fireboxes and various other aids to heat control. In furnaces of this type, with external fireboxes irregularity of working sometimes is induced by inequalities in the supply of heat. In order to correct this defect heating chambers are introduced between successive treatment hearths, and the combustion gases pass through these chambers as well as directly to the hearths themselves. A drawing of the furnace is given.

An Investigation of the Air Lift Pump.—Bulletin No. 450, Engineering Series, Univ. of Wisconsin. Madison, Wis. (Through Met. and Chem. Eng., March, 1913.)

The air lift method of pumping, though not highly efficient as compared to other methods, is, nevertheless, an important one, owing to the many advantages it possesses over other methods in pumping corrosive liquids and raising large quantities of water from well of small bore. The bulletin describes the following points, which were investigated at Wisconsin University: (1) Percentage of submergence. (2) Lift. (3) Discharge. (4) Volume of air. (5) Pressure of air.

The Volumetric Determination of Manganese in Rock, Slags, Ores and Spiegels.—Jour. Ind. and Eng. Chem., Feb., 1913.

Detailed description of a rapid volumetric method for manganese in the materials mentioned in the title.

The Fertilizer Materials Market

NEW YORK

Activity in Small Orders for Quick Shipment. Indications Point to a Very Late Season. Increase in Sulphate of Ammonia Shipments from the United Kingdom. New Fish Scrap Plants for British Columbia. Statistical Position of Nitrate of Soda

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, March 27, 1913.

Dealers here in fertilizer materials have been quite active during the past week filling orders of small lots for immediate shipment. Supplies in the South are pretty well cleaned up and Southern manufacturers have been "shopping" quite extensively endeavoring to take up lots here and there on the most favorable basis. Supplies do not appear to be very free at any particular point. Indications point to a very late season and the demand for these small lots will probably continue for some time to come. Inquiry and sales of blood and tankage and bone meal have been quite active in this market during the past week. As regards prices the general position is unchanged although sulphate of ammonia is weak.

Sulphate of Ammonia

The exports of sulphate from the United Kingdom during February amounted to 25,638 long tons as against 23,894 tons in February, 1912. The value of the shipments were as follows: February 1913, £361,782; February 1912, £325,542. Shipments to the United States reveal a marked increase amounting to 2,754 tons in February, 1913, as compared with 1,487 tons in the corresponding month of 1912. The shipments to France increased from 154 tons to 2,261 tons. Those to Spain and the Canaries were slightly larger, those to Italy declined nearly 1,000 tons. Shipments to the Dutch East Indies, Italy and Japan all show marked declines. Shipments to the British West Indies and British Guiana show substantial increases while those to unspecified countries doubled. The sulphate market has been dull and weak during the week. Spot lots are in fairly urgent request but there is practically no important business passing in future deliveries.

Pyrites

A mining company has been formed with a capital of $100,000 to operate at Mineral, Va., presumably to mine pyrites. The only arrival of foreign pyrites reported during the week was a cargo of some 5,700 tons at New York.

Blood and Tankage

Both blood and tankage continue in good request for prompt shipment but the quantities available in this market are comparatively small and freight competition does not permit of shipments to distant points. An arrival of some 75 tons of tankage from Uruguay was noted at this port during the week.

Fish Scrap

Announcement is made of the incorporation of the Alliance Fishing Co., and the Grenville Channel Fish and Cold Storage Co., Ltd., in British Columbia, the capital of the former being $50,000 and of the latter $250,000, both to manufacture fish oil and scrap. The Canadian Fish and Cold Storage Co. will also build a plant in the same province. Hardly a week passes now without the announcement of the formation of one or more companies to operate in this line on the West Coast. Apparently there is a "boom" in the fish manure business in the Northwestern States. Our readers are aware of the large number of new companies that have been formed in the East this season and the fish fertilizer industry is rapidly coming to the front. Predictions are being freely made that within a few years little if any fish scrap will be available for fertilizer purposes and its use as a poultry food will render it too costly for use as an ammoniate. Just at the moment there is practically nothing doing in the fish manure line. The herring are now making their appearance in the South and will shortly be followed by the menhaden.

Meals

No change has been announced for this market and mowrah meal is the only item offering. Castor meal is available on about the same basis per unit of ammonia as domestic ammoniates. Buyers are paying but little attention, however, to the product.

Bones

There has been good inquiry for and sales of bone meal in this market during the week. Arrivals have been quite frequent amounting to 815 bags of bone from Tampico and 212 tons of bone flour from Trieste and Rotterdam at this port; 775 sacks of bones at New Orleans from Tampico, 112 tons of bone meal at Norfolk from Rotterdam and 50 sacks of bone meal at San Francisco from Hong Kong.

Calcium Cyanamid

Manufacturers report a brisk inquiry for both powdered and granulated cyanamid for March and April shipments. In view of the fact that the Southern trade is not covered for its ammoniate requirements these orders have invariably been of the "rush" character. Manufacturers have been making prompt delivery.

Nitrate of Lime

Agents of the Norwegian manufacturers report conditions in the nitrate of lime market to be very satisfactory and fertilizer manufacturers continue to experiment with the product reporting favorable results. No price changes have been announced of late and the product continues to sell on quite a favorable basis per unit of ammoniate when compared with other chemical manures.

Kukui Nut Meal

Varnish and soap manufacturers have lately been experimenting extensively with an oil pressed from kukui nuts which grow profusely in Hawaii and the South Sea Islands. The meal resulting after the oil is extracted appears to be very rich in nitrogen, phosphoric acid and potash. The extent of the possibility of this trade may be readily realized when it is considered that Dr. E. B. Wilcox, in charge of the Honolulu experiment station, estimates that 50,000 tons of nuts could easily be raised in a year. It is reported that one of the large paint and soap oil houses intends entering this field. Naturally if the oil is crushed in Hawaii the meal or cake residue will be consumed there. During the past few years the consumption of nitrate of soda, sulphate of ammonia and nitrate of lime in the Islands has increased very largely and the introduction of a new domestic ammoniate would, no doubt, affect this trade.

Nitrate of Soda

There has been practically no change noted in the position of nitrate during the past week, the demand continuing fairly good with numerous orders for prompt shipment. Supplies are held at all ports with the exception of Baltimore where a cargo is due April 14th. Prices remain unchanged for the week.

The following figures cover the statistical position very thoroughly:

	1913—Tons	1912—Tons
Feb. deliveries in U. S. Atlantic ports	33,000	27,000
Feb. deliveries in Europe	233,160	307,430
Feb. shipments to U. S.	48,480	33,220
Feb. shipments to Europe	157,410	132,800
Estimated loading at March 1st for U. S.	20,180	11,660
Estimated loading at March 1st for Europe	69,450	83,300
Production in February	200,000	191,390
Production in January-February	434,720	405,790
Production in 12 months to March 7th	2,584,110	2,506,270
Estimated Coast stock at March 1st	430,700	468,300

New York, March 27, 1913.

COTTONSEED OIL AND MEAL

The local cottonseed oil market scored a substantial advance during the past week and a firm tone prevailed throughout the interval. Trading generally was quite heavy although the lack of a wire service toward the close retarded operations to a marked extent. The frightful calamity that has visited the Central States has practically cut Chicago off from the rest of the world, for all wires ceased operations at about 11:30 A. M. today. As a consequence the market showed a tendency to quietness toward the end of the week.

The advance and firmness noted has been entirely due to the strong market that has prevailed for pure lard. The hog lard market is the key to the situation and indications point to a firm market in that direction. The floods in the West will undoubtedly result in lighter receipts of hogs at slaughtering points and the market with such conditions prevailing will or at least should remain firm. Short interests in refined oil covered quite extensively and there was a better investment trend from Western sources.

The tenders against March contracts were some 13,000 barrels and this option expired without any special feature. The open market was affected little by this operation, as deliveries were made by one large refining interest and were stopped by another. Of the future options, May, July and August attracted the most attention, with refiners selling May and buying July and August. Western connections were important buyers of May and the South was also quite conspicuous in its purchases of this position. It is the general opinion here that speculators are holding large quantities of May oil and they may experience considerable difficulty in disposing of their holdings before this option becomes due.

The strength of the provision market has added strength to the crude oil situation. The crushers have been securing more money for their product and are now in a very strong position. An item of considerable interest was the report of the Census Bureau issued during the week which indicated an extremely large supply of linters. Judging from this there must be a fairly large supply of seed still held somewhere in the South that is available for crushing purposes. Seed has been selling at a very high level throughout the season and this has naturally restricted purchases by crushers who have been buying conservatively as conditions warrant. The mills in the Southeast have been hit rather hard by the high seed prices and have consequently been compelled to sell oil at very high prices before they could figure anything in the way of profit.

The outlook for lard compound at the moment is bright. As previously stated the make of hog lard will probably be curtailed as a result of light receipts in the flooded districts and with a difference of 3c. per pound in favor of compound business will probably result. Trading in this market, it will be recalled, has been very disappointing of late. For the first time in a lengthy period the soap trade has been a buyer of off oil. Sales of 25,000 to 30,000 cases of soya bean oil were reported for soap making accounts during the week and indications point to a renewal of activity in the soap making trade. Some of the largest soap making plants in the country are located in the water swept districts of Ohio and Indiana and plants elsewhere will have to make up for the restricted production. Corn oil has advanced; greases are firm and rather scarce; likewise tallow. Cotton oil for soap making purposes appears to be slowly coming into its own again.

The cake situation is very firm and the demand for fertilizer purposes in view of the general scarcity of ammoniates has improved. Offerings are reported to be rather restricted in the South.

GLUES

Business in glues appears to be larger than at this time last year and the leading manufacturers report that their output is sold well ahead. The demand for glues of foreign origin is, perforce, becoming larger and arrivals have increased. Prices continue on a firm basis and in view of the high cost of raw materials and heavy overhead expenses present values are probably here to stay.

MISCELLANEOUS PACKING HOUSE PRODUCTS

The general provision market has been firm throughout the interval, particularly so after the news of the appalling calamity that has visited the Middle Western States reached here. It is presumed that practically all the live stock held at Central Western killing points and stock en route has been drowned. Lard has advanced and has been active throughout the week. The situation is rather uncertain although every indication points to a high market. Oleo stearine has advanced ½c. with a fair degree of activity noted. Lard compound remains unchanged, but judging from the present situation buying will probably be noted in this market shortly. Tallow advanced slightly and has been more active for soap making accounts. The demand for greases is improving owing to the approach of the summer season. Competing soap oils have been firmer with more activity noted.

BALTIMORE

Continued Activity in the Market. A Satisfactory Tonnage of Mixed Fertilizers. Animal Ammoniates Strenghening

Exclusive Correspondence to "The American Fertiliser."

BALTIMORE, March 26, 1913.

The fertilizer market continues fairly active. Reports from several local manufacturers indicate that the orders are coming in in very satisfactory shape, and that up to the present writing the season has been satisfactory so far as tonnage is concerned.

Animal Ammoniates.—The demand from this section is not as strong as it was a week or ten days ago, but it is a little early to get a line on the actual requirements, manufacturers having all been pretty well supplied in the beginning with crude materials. Further South the demand for spot material is a little more insistent. The large Western producers are claiming to be well cleaned up on materials for prompt and nearby, and prices have strengthened up with practically every sale with even stronger feeling on their part for futures.

Acid Phosphate.—The market for wholesale quantities is quiet and local producers are too busy with their shipments to push this branch of their business. The general feeling seems to be that with a continuation of the present state of affairs stocks of this material will be pretty well cleaned up.

Nitrate of Soda.—The market continues strong for spot and nearby. The cargo now discharging, although of generous size, had no weakening effect upon the spot prices. The demand is unquestionably curtailed because of the strong quotation.

Sulphate of Ammonia.—Spot is pretty strongly held and prompt shipment both foreign and domestic remains as heretofore. On long futures, particularly foreign, considerable inducement is being offered in the price.

Bone Meal.—There is some spot demand, but stocks are small, for future shipment to come forward concessions are being made in the prices.

Potash Salts.—The demand for spot delivery is fair with offerings not quite so plentiful and prices on such lots are more in sellers' favor than have been apparent for some weeks past.

PHILADELPHIA

Very Little Change in Materials. Manufacturers Busy with Shipments. Temporary Shortage of Spot Potash. Tankage and Nitrate Firm

Exclusive Correspondence to "The American Fertilizer."

PHILADELPHIA, March 27, 1913.

Conditions in the local fertilizer materials market have undergone very little change since our last advices. Manufacturers' attention has been centered on taking care of shipments of complete fertilizers and very little thought has been given to the trend of the market on materials.

Potash Salts.—A temporary shortage created a fair demand for "spot" goods, but we understand this was covered through an exchange between manufacturers, as there were some who had surplus stock on hand. The market will no doubt be normally supplied within the next few days, as we are informed there has been considerable tonnage declared on steamers shortly due to arrive.

Tankage.—While there has been very little demand for this article, we are informed that inquiry for a limited quantity for prompt shipment reveals the fact that apparently the supply of medium grade stock has been very much depleted on account of heavy purchases by some of the large manufacturers. Quotations available show a slight advancing tendency, but so far as we can learn the general trade in this section is fairly well if not completely supplied with material in this line.

Nitrate of Soda.—Delayed arrival of nitrate steamer, which was expected to reach port a week since, has created a shortage and small "spot" lots out of store are quoted at considerably higher price. Goods previously arranged on contracts and declared per steamer reported now due to arrive will no doubt put the trade in good supply. We understand the importers are very firm on quotations for near-future arrivals.

CHICAGO

Animal Ammoniate Market Has Been Very Active, But Now Quiet on Account of Weather Conditions. Blood Has Advanced

Exclusive Correspondence to "The American Fertilizer."

CHICAGO, March 25, 1913.

The animal ammoniate market which was very active up to a day or two ago has become quiet yesterday and today because of interrupted telegraph service, buyers and sellers being unable to communicate with each other, but the packers have advanced the price of blood about 10c. per unit and some of them have advanced the price of tankage.

Shipments are also very large on regular contracts, as buyers are urging shippers to get the goods out as fast as possible.

The demand is mostly for ground dried blood and high-grade ground dried tankage, but considerable business is being done in 6½ and 30 tankage and there is some demand for concentrated tankage, although the supply is small.

There is some demand for raw bone meal but little business is being done, as sellers' prices are prohibitive.

There are fairly liberal offerings of steamed bone but most offerings are held above the current market. There are some productions of glue tankage and other miscellaneous material on the amrket.

TENNESSEE

The Activity in the Market Continues. Extensive Shipments of Complete Goods. Raw Materials Quiet

Exclusive Correspondence to "The American Fertilizer."

MT. PLEASANT, March 24, 1913.

The fertilizer market of middle Tennessee continues quite active, as previously reported. Local concerns are now extremely busy with the shipment of complete goods, and, with the large stock supplies on hand, the market for raw materials remains quiet.

Nitrate of Soda.—The nitrate of soda market shows very little change. Prices and shipments continue normal.

Ammonium Sulphate.—The ammonium sulphate market is very dull, and very little interest shown. Few inquiries to the present attractive quotations.

Acid Phosphate.—The market is very good. Considered by local concerns above normal. Reports have come to us of several large shipments since last report.

SAVANNAH

Cargoes of Nitrate Have no Surplus for Spot Sales. Cottonseed Meal Active and High. Sulphate of Ammonia Scarce

Exclusive Correspondence to "The American Fertilizer."

SAVANNAH, March 25, 1913.

Nitrate of Soda.—Boats now discharging at Charleston and Savannah and Wilmington have practically no surplus for spot sales. A large spot business has been done covering these vessles but importers have not raised their prices. April prices are the same now as spot shipments.

Cottonseed Meal.—The market is very active with highest prices of the season prevailing and only small quantities available.

Sulphate of Ammonia.—There is practically none for sale at ports and all purchases have to be made for steamer to arrive or for shipment from coke ovens in the interior. Prices are unchanged.

High Grade Blood. — Demand continues with prices slightly higher. This also applies to high grade tankage.

Fish Guano.—There is practically none left for sale by first hands, with small shipments arriving from time to time from abroad.

Acid Phosphate.—The market is quiet with practically no demand and the prices unchanged.

CHARLESTON

Good Sales Reported for All Materials. Shipping of Mixed Goods Brisk. Fair Weather Continues

Exclusive Correspondence to "The American Fertilizer."

CHARLESTON, March 26, 1913,

The market here continues active. Good sales are reported for all materials, both near and future deliveries.

Shipping, on the part of the fertilizer manufacturers, continues briskly. With continuance of fair weather, an unusually good season will be enjoyed by the fertilizer companies.

Nitrate of Soda.—The arrival of recent cargoes has relieved the situation here as to spot material. The market is firm and active.

Sulphate of Ammonia.—There is no spot material, quotations are made on domestic from the West.

Cottonseed Meal.—The meal market has advanced somewhat, and market conditions are reported very good, though the sales are not numerous.

Animal Ammoniates.—The tone of this market is practically unchanged, though prices have advanced somewhat.

Acid Phosphate.—Heavy, with a good stock unsold.

Phosphate Rock.—Active, good quantity of stocks unsold.

Pyrites Ores.—Nominal demand, at usual prices.

Potash Salts.—The demand continues active at the prevailing syndicate prices.

ATLANTA

The Demand for Fertilizer Materials Still Good, Although Season is Growing Late. Blood and Tankage Selling Well

Exclusive Correspondence to "The American Fertilizer."

ATLANTA, March 24, 1913.

Though the season is growing late the demand is still good for fertilizer materials, for quick shipment from nearby points. Buyers, however, show very little disposition to buy goods that will take any length of time for delivery.

Animal Ammoniates, particularly blood and tankage, are still selling well, with the market very firm, for nearby shipments.

Cottonseed Meal is now very scarce, with considerably advanced prices on any offerings made.

Sulphate of Ammonia.—Market practically bare of spot goods, but too late for further imports. Considerable inquiry, however, for spot goods.

Nitrate of Soda.—Market firm and steady in tone; demand good for immediate shipments.

Fish Scrap.—Practically all lots of fish scrap have been picked up for this season, and there is now very little offering in this line.

Cynamid has enjoyed an increased demand recently, some very nice sales having been reported.

Acid Phosphate sales are slow, and have been for some time past, due to the large stocks carried over from last season on these goods.

Pyrites Ore.—This commodity continues to enjoy a steady demand, with the price firm; some nice sales reported.

MATERIALS IMPORTS AT NEW YORK

Exclusive Correspondence to "The American Fertilizer."

New York, March 27, 1913.

The following imports were noted at this port during the past week:

Fertilizers, n. e. s.—115 bags, "Mexico," Vera Cruz; 30 pkgs., "Minnehaha," London; 1 case, "George Washington," Bremen; 25 bags, "Minnewaska," London; 1,120 bags, "Zeeland," Antwerp.

Bones.—810 pkgs., "Camagney," Tampico.

Bone Flour.—1,000 bags, "Alice," Trieste; 1,000 bags, "Potsdam," Rotterdam; 1,000 bags, "President Lincoln," Hamburg.

Kainit.—550 tons, "Macedonia," Hamburg; 560 tons, "Barbarossa," Bremen.

Potash Muriate.—4,480 bags, "George Washington," Bremen.

Potash Sulphate—395 bags, "Pennsylvania," Hamburg.

CHARTERING

Exclusive Correspondence to "The American Fertilizer."

New York, March 27, 1913.

The following fertilizer-carrying vessels were contracted for in the local market during the past week:

Phosphate Rock.—Schooner "Augustus H. Babcock," 1,300 tons, from Port Tampa to Norfolk, private terms.

Pyrites.—British steamer "Polamhall," 2,580 tons from Huelva to New York, 9s 3d, prompt.

HOW TO SELL FARM PRODUCTS

In the first National Conference on Marketing and Farm Credits, which is to be held in Chicago, April 8, 9 and 10, 1913, the stage is set for one of the greatest gatherings of prominent and well-known men in all lines of professional and business activity ever assembled to bring about improved economic conditions for producer and consumer. It marks the beginning of a united effort on the part of the American people to work out some solution whereby a more just and equitable division of profits may be enjoyed by producer and consumer, proportional to the services rendered by the individual.

All sessions of the Conference are to be open sessions, and open to full, free and frank discussions of how to create better methods of distributing and marketing farm products. Big men of the country, our new Secretary of Agriculture, David F. Houston, President Van Hise of Wisconsin University, President Waters of Kansas Agricultural College, President Mezes of Texas University, B. F. Yoakum, the well-known railroad man, B. F. Harris, Illinois banker-farmer, and others of like caliber, will present addresses and lead discussions, but each and every man in attendance will have a chance to get into the discussion if he will.

The opening session will be given over to a brief presentation of the problems in hand, so far as marketing is concerned. The following three sessions will consist in presenting workable concrete methods of solving these problems. One session will be given over to transportation problems and the work which the Federal Government can and should do through the establishment of a National Bureau of Markets. Another session will be devoted to the problem of Farm Credits, with studies and explanations of farm credit systems in Europe and how they may be adapted to conditions in this country.

This movement deserves the active support of every producer.

The Conference will be well attended, and it merits universal encouragement and support. Such action as is deemed necessary and advisable, after all in the discussion line has been said and done, will be taken by the various Conference committees, and the wheels set in motion for a better and more equitable division of labor and the dollar.

Any further information can be secured from Charles W. Holman, Secretary, 1408-1409 Steger Building, Chicago, Ill.

DANGERS OF HOME-MIXING

How Often Must the Home-Mixer Make his Success in Spite of—Not Because of—His Home-Made Product?

SANDUSKY, O., March 17, 1913.

EDITOR OF THE AMERICAN FERTILIZER:

Under the caption, "A Note of Warning," in a recent issue of his county paper, a writer of some recognized standing, evidently of good intent and solicitous for the welfare of his fellow-farmer, adds another chapter to the cause of "Home-Mixing." While revealing several inconsistencies, his lengthy article shows deeper thought and presents his hobby from a different angle than the average enthusiast.

Surely, after all that has been said and written, the more intelligent farmer, who values his time, worry and labor at something, will grant that with the crude facilities at his command he cannot compete with modern automatic pulverizers and mixers, in which the manufacturer has of necessity invested thousands of dollars; he will at least grant that it is impossible to get so intimate a commixture, and do not the following figures by Wm. H. Bowker prove beyond doubt the highly concentrated home-mixed fertilizer, of the raw materials? "When the farmer applies as large a quantity as 500 pounds to the acre of concentrated fertilizer, he is giving each pound of soil less than one-quarter grain of plant food." What a very small ratio of *actual plant food!* Now, for the sake of even distribution in the soil, would not the most radical home-mixer prefer to have parts of *each* of the three elements in that one-quarter grain of plant food applied to every one pound or 7,000 grains of soil, or will he be content with one-quarter grain of nitrogen applied to this pound of soil, one-quarter grain of phosphoric acid to the next, and possibly one-quarter grain of only the element potash to the next—all of which, due to the imperfect intermingling of the raw materials, is sure to result in an uneven feeding surface for the plant roots?

The average home-mix enthusiast cannot be charged with dribbling on his home-made fertilizer in too little quantity. In fact, the same ardent home-mixer who, when he runs short, will buy and use only 200 pounds per acre of a 1-7-1 factory product applies as high as 500 pounds of a 3-8-7 goods made up with hoe and shovel on his barn floor—and this much larger proportionate amount of his own goods instead of a properly compounded concentrated fertilizer, mind you, in sheer vindication of his stand, not because he can better afford it, as will be shown later.

Any apparent success when the season is peculiarly favorable is ofttimes due to the liberal use of plant foods; then, again, the heavier application proves the home-mixer's besetting sin. In order to understand more clearly the dangers and losses attending the use of a highly concentrated home-mixed fertilizer, will the home-mixer please consider for a moment "how plants take up the elements nitrogen, phosphorus and potassium." Near the tip end of the growing roots of plants are found myriads of root-hairs—long, single-celled tubes, with the cell-walls so thin and sensitive as to permit absorption of the soil moisture and any compounds it carries in solution. As *no solid particles* can pass through these cell-walls, however, the plant foods must first be dissolved in the soil waters, the nutrient solution then passing through the thin walls of the root-hairs on up into the roots, to be carried through other sets of cells up into the leaves. All the while the plant food nutrients are being utilized in the manufacture of plant tissue, etc.

Concentrated home-mixed fertilizers, by forming a too strong solution, prove injurious in several ways. We have seen how all plant foods, after dissolving in the soil waters, pass into the root-hairs. Now, the tip of each plant rootlet is constantly pushing through the soil in search of nutrition, and the very moment these rootlets push into such a concentrated solution the result will be an abnormal growth or burning of the vegetable tissue, injury to the feeders (root-hairs), stunted growth and possible death of the plant. If such a solution reaches the seed it is likely to injure it, retard and even prevent germination.

"Economy" is the enchanted word, emblazoned in fiery letters of red on the banner of the average home-mixer, and in the buying of his raw materials he has been educated true to his faith. The more radical will not pay the price for a well-made acid phosphate. With the apparently attractive price inducements held out by the seller, the home-mixer as likely as not gets an article high in free acids. Nitrate of soda, so often used as the sole source of nitrogen, is incorporated with the hurriedly and poorly-made acid phosphate, and, for the lack of preventive measures, 15 to 20 per cent. of the nitrate nitrogen escapes as a gas. If it happens to be a wet season, 50 per cent. or even more of the remaining nitrate nitrogen may be washed below the reach of the plant roots or *be lost altogether.*

And nitrogen is the most expensive element which the farmer has to buy!

Like animals, crops can be overfed or fed an unbalanced ration. The plant may take up unnecessary amounts of food and fail to utilize it. In any event, the excessive applications of unbalanced home-made fertilizers *result in more loss.*

For the want of added calcareous materials, which react with the water soluble phosphoric acid to form the citric soluble phosphate, reaction in the soil changes it to the less available iron and aluminum phosphate, which possesses a much lower solubility—Nathaniel P. Pratt. *This means more loss* to the home-mixer.

There is the further danger of a part of the water soluble potash in the home-made fertilizer being changed to insoluble forms, which *means still further loss.*

If perchance the soil be lacking in basic "acid-neutralizing" compounds, the continued heavy applications of a poorly-made acid phosphate may check the decomposition of the organic matter in the soil, the formation of nitrate nitrogen, and result in the destruction of the nitrogen-fixing bacteria. *Still more loss* to the home-mixer!

The farmer, of course, cannot be proficient in chemistry; he cannot be expected to know the absorptive and retentive powers of the various types of soils and sub-soils, or to understand the varied and intricate requirements of different farm crops. Because of this he cannot balance all the necessary considerations and so graduate his formulæ from the different sources to avoid the transference of water soluble plant foods into insoluble forms, to prevent waste, insure the continuous feeding of the plant and the fixation of any excess plant foods.

Reputable manufacturers, zealously safeguarding the interests of the fertilizer consumer, have spent thousands of dollars in scientific research for the sole purpose of avoiding the above and many other losses and dangers attending the use of a home-mixed fertilizer. The same manufacturers are spending money liberally to educate the farmer in the heavier use of the higher grade complete manures. Why then does the home-mixer accord such veneration to his highly concentrated home-mixed product that is so productive of waste and damage, and really works no marvels, and expect bumper crops from the dribbling on of infinitesimal quantities of plant food, the demand for which he himself is responsible for creating?

Under adverse conditions, with the many other considerations, for lack of space not enumerated above, the only redeeming feature about the whole home-mix proposition is that it ought to prove a sure specific for reducing an inflated bank account. As "the laborer is worthy of his hire," so also is the investor entitled to a margin of profit on his investment in modern appliances and machinery, laboratories and skilled labor. Will the progressive, thinking farmer gainsay him this right?

Very truly yours,
FRED. DENKEWALTER, *Sales Manager,*
THE JARECKI CHEMICAL COMPANY.

THE FERTILIZER MOVEMENT IN THE SOUTH

Reports from the various fertilizer sections throughout the South indicate that the demand for mixed fertilizers for immediate shipment is being maintained, and it is with difficulty that sufficient labor is being secured to keep pace with the orders received.

C. N. English, agent of the Seaboard Air Line Railway, recently made the following statement: "The fertilizer movement over the Seaboard Air Line Railway is the largest in years. This, I presume, is the condition of all the railroads of the State; the Seaboard gets its proportionate share of this movement, and is a barometer of freight traffic."

NOW OCCUPYING NEW WORKS

The Edward Renneburg & Sons Company, Baltimore, Md., the well-known manufacturers of fertilizer machinery, announce that they have removed to new and larger works, where the capacity and water facilities are much increased. The location of the new works is Atlantic Wharf, Boston Street and Lakewood Avenue, and the new offices are at 2639 Boston Street, Baltimore, Md.

AMERICAN GUANO CORPORATION

The American Guano Corporation, Los Angeles, Cal., has been incorporated with a capital stock of $200,000. The directors are: J. J. Ball, J. Ziegner-Uriburu, G. A. Montgomery, E. R. Alter, C. B. Ford, J. M. Robledo and E. F. Beck. Articles of incorporation were filed March 13th.

CHANGE OF NEW YORK ADDRESS

Charles F. Garrigues & Co., the well-known dealers in materials and supplies for fertilizer manufacturers, who have been located for a number of years at 56 Pine Street, New York City, have moved into larger and more commodious quarters at 80 Maiden Lane, New York City.

AMERICAN POTASH INC.

Plant to be Built Immediately. Resume of the Process for Producing Potash from Kelp

The officers of the American Potash Inc., Los Angeles, Cal., have just issued a statement to the effect that the company has purchased a 12-acre tract of land at Long Beach, Cal., upon which will be built immediately a plant for the production of potash and other by-products from kelp. The plant will consist of four alternating units, work on the first of which will be started at once and will be completed by July 1, 1913. The four units when completed will have a daily capacity of 500 tons of wet kelp.

The company have just issued a very complete résumé of the potash industry as it may relate to the reduction of marine algae, commonly known as seaweed, to supply that material.

Regarding the kelp industry the résumé issued by the company is in part as follows:

Harvesting

The large bodies of kelp available for an industry of this kind are all in semi-exposed positions on rocky, uneven bottoms and before rocky and precipitous shores.

The boats, barges and all equipment must be of sufficient size and so constructed that life and property are safe under all conditions of tide and weather.

The strands of kelp running in every direction and intertwined with each other will foul any moving parts that they may come in contact with except a cutting edge that will separate them.

The kelp allowed to drift on the beach loses its value in ratio to the amount of sand it accumulates. This is generally from 20 to 40 per cent. of its own weight, according to weather conditions. This sand will not shake off or wash off, as the sodium alginate, which immediately covers the kelp when exposed to the air, is like glue and practically waterproof; therefore the kelp must be loaded on barges and transported from the bed to the drier without coming in contact with any foreign matter, and be placed in the drier in the shortest possible time after being cut loose from the bed, to prevent any loss from leakage.

Drying

Kelp left in the open air for forty-eight hours will lose 50 per cent. of its weight, but in so doing will also lose 20 per cent. of its value, as immediately on exposure to the air it exudes moisture from every pore and cell, and this moisture is a saturated solution of potassium chloride.

Therefore an economical drier must preserve all the original moisture the kelp contained when first taken from the water.

Kelp dried in the open air has effloresced and lost 20 per cent. of the potassium chloride it first contained, therefore a practical drier must complete its work within a closed compartment where all of the dripping moisture and effloresced salts are recovered.

When kelp is dried in a closed compartment on stationary pans or trays, with the temperature below 100° C., the vegetable cells break down and the animal organisms become immediately active, causing a continual leakage of valuable matter and a waste of heat and time to complete the process. Therefore a successful drier using a heat less than 100° C. must keep the kelp in constant motion to prevent the vegetable cells from breaking down and the animal organisms from becoming active.

When kelp is dried in a closed compartment where the temperature exceeds 100° C. all of the 40 per cent. free iodine, all of the acetone, acetic acid and alcohol will vaporize and pass off. Therefore the drier must work at a temperature less than 100° C. to be economical and efficient.

The drier we have constructed covers all of these points, and will give 30 per cent. more efficiency than any process known at the present time.

Calcining

The kiln is constructed of brick, with a fire-clay lining and cast iron bottom through which the heat enters. (This is not a closed retort, nor does it exclude the air.)

This separates the volatile from the non-volatile material at a temperature not to exceed 400° C., leaving the sulphates and iodides in their original form and ratio.

Volatile Matter

This passes from the calcining kiln to a condensing system, passing through a tar chamber which is kept at a uniform temperature at the top and superheated at the bottom, which re-distills and separates the lighter and finer material from the coarser and heavier which remains, the lighter passing to the next chamber, where the temperature is also regulated by cold water pipes and where the varnish gum or shellac is deposited.

There is now remaining the still lighter material, which is condensed through a system of pipes passing through a tank of cold water, the pipes all draining to one point where the creosote, alcohol and acetone are collected in one chamber.

The combustible gases are then forced through a water bath where all further moisture and solids are extracted and the accumulated gas ready for laboratory or other uses.

Non-Volatile Matter

As the volatile matter vaporizes and passes from the calcining kiln the residue is raked out from the bottom into the ash sump.

Owing to the low temperature at which the volatile matter is discharged, and the infusions of air through the porous nature of the sides of the kiln, the remaining ash is a light gray color, free from clinkers or solid material of any kind.

The ash being practically red hot, cold water is turned onto it, which completely shatters any remaining solids and places everything in a semi-solution.

The semi-solution or lixiviate passes to a centrifugal pump, which discharges into a tank with a conical bottom. Superheated steam is then injected through the bottom of the tank, the centrifugal pump being in operation, the material passing the jet of live steam is taken from the bottom of the tank and discharged again into the top. This process is continued until the solution has obtained its maximum gravity at 100° C.

The operation is then stopped and the mixture allowed to cool. All of the carbonates and a large portion of the sulphate of lime will settle out; the clear liquor is then decanted from the top and passed to the evaporating system.

Evaporation and Separation

The clear solution, as taken from the lixiviating tanks, passes into the first one of a series of evaporating tanks, which are all connected at one specific level.

As the heat and gravity of the solution increases, the remaining sulphate of lime will be precipitated in the first of these tanks and discharged from the bottom.

The heat is gradually increased until the last tank of the series is reached, where the solution is discharged into a settling tank at a temperature of 107° C., in which all of the remaining sulphates of potassium, sodium and magnesium will precipitate and be recovered.

The solution will then pass to another settling tank, where the temperature will be raised and retained at 100° C., and sufficient time allowed for all of the sodium chloride to precipitate, leaving the solution free of the mixed salts and containing only the chloride and iodide of potassium.

The solution then passes into a series of concrete cooling vats, where it remains for several days, until all of the potassium chloride has crystallized out.

The mother liquor is then drained off, is passed into iron tanks and completely dried out. The iodine is cut free and recovered, and the remainder passes through the original process.

Be advised that our harvesting and cutting equipment overcomes every difficulty, is safe and secure in every detail and inexpensive to operate.

Our drier preserves everything the kelp originally contained.

Our calcining, condensing, evaporating and separating are one continuous process, the recovery in each instance being absolute and complete.

The American Potash Inc. is a consolidation of the Pacific Kelp Company of San Francisco, Cal., and the Coronado Chemical Company of San Diego, Cal.

The Pacific Kelp Company, through Mr. Wilson, has been operating several years, and has praoduced from the giant kelps of the Pacific Ocean potassium, sodium, iodine, varnish, creosote, alcohol and paint pigments in commercial quantities. The entire process and devices for harvesting, drying, reduction and separation are protected by patents issued and applied for in the United States and all foreign countries. These patents are now the property of the American Potash Inc.

The Coronada Chemical Company was organized in 1906 by the late Henry S. Firman, of San Diego, for the purpose of utilizing the seaweeds of the Pacific for fertilizer and other uses. Mr. Firman was an engineer and chemist of world-wide reputation. His processes for the reduction of kelp are patented in the United States and all foreign countries where protection is possible. These patents belong to the American Potash Inc.

The directors and officers of the company are as follows:

President, Harry Wilson, Los Angeles, formerly president Pacific Kelp Company, San Francisco, Cal.

Vice-President, Arthur J. Brander, San Diego, formerly with Pacific Phosphate Company, Ltd., London, England.

Treasurer, George B. Harris, Los Angeles, formerly general contractor, San Francisco, Cal.

Secretary, Arthur H. Firman, Los Angeles, formerly president Coronado Chemical Company, San Diego, Cal.

Director, S. A. Knapp, San Francisco, Cal., chemical and mining engineer.

NEW FERTILIZER TARIFFS

(Compiled by our expert from the latest National and State Reports.)

Ryan's I. C. C. No. 34 (Virginia Cities Fertilizer Tariff No. 1) has a new supplement No. 7, effective April 10, 1913. This tariff carries rates on fertilizer, fertilizer material and pyrites from Virginia Cities to local and junction points in the South and Southwest. Supplements 6 and 7 will be in effect at that time and will contain all changes.

* * *

Supplement 7 to Ryan's I. C. C. No. 30 (Baltimore Fertilizer Tariff No. 2) will take effect April 10, 1913. At that time supplements 6 and 7 will be effective and will contain all changes. This tariff provides joint, local and proportional rates on fertilizer and fertilizer material (via rail and water) from Baltimore, Md., to local and junction points in the South and Southwest.

* * *

Supplement 8 to Ryan's I. C. C. No. 33 (Acme-Navassa-Wilmington Fertilizer Tariff No. 1), showing rates from Acme, N. C.; Navassa, N. C., and Wilmington, N. C., on fertilizer, fertilizer materials and pyrites, will become effective on April 15, 1913, for interstate business. On intrastate movements this supplement went into effect March 15, 1913. Supplements 6 and 8 contain all changes.

* * *

Boston and Maine Railroad Tariff I. C. C. No. 600, covering joint commodity rates on various commodities, including fertilizer, from stations on the Boston and Maine Railroad to points on the Bangor and Aroostook Railroad, has a new supplement, Supplement No. 2, effective March 17th. This supplement contains all changes, now in effect, from the original tariff.

* * *

A new supplement, No. 6, to Boston and Maine Railroad Company's Tariff I. C. C. No. 500, became effective March 15th. This is a joint and proportional commodity tariff, applying on various commodities, including fertilizer, from stations on the Boston and Maine Railroad, and St. Johnsbury and Lake Champlain Railroad, to stations in Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania and Virginia. Supplements Nos. 4 and 6 are now in effect, and contain all changes.

* * *

Supplement No. 19 to Philadelphia and Reading Railway Company's Tariff Order I. C. C. J. 3362 will take effect April 7, 1913. Supplements 7 and 19 contain all changes in effect at that time. This tariff publishes joint and proportional miscellaneous commodity rates, including rates on fertilizer and fertilizer materials, from territory on the Philadelphia & Reading Railway, Atlantic City Railroad, The Gettysburg & Harrisburg Railway, Williams Valley Railroad and Cornwall Railroad to territory on the Baltimore & Ohio Railroad, Baltimore and Sparrows Point Railroad, Southern Railway and Valley Railroad of Virginia.

* * *

Philadelphia & Reading Tariff Order I. C. C. J. 3461 publishes carload rates on fertilizer from Reading, Pa., to stations on the Central Railroad of New Jersey, New York and Long Branch Railroad. March 1, 1913, Supplement No. 3 to this tariff became effective. It contains all changes from original tariff.

* * *

Local, Joint and Proportional Miscellaneous Commodity Tariff (including fertilizer and fertilizer materials), Philadelphia & Reading Order I. C. C. J. 3714, carrying rates from and to stations on Philadelphia & Reading, Atlantic City Railroad, Cornwall Railroad, Ironton Railroad, The Gettysburg & Harrisburg Railway and Stone Harbor Terminal Railroad, has a new supplement, No. 1, effective March 10, 1913.

* * *

Supplement 7 to Pittsburgh & Lake Erie Railroad Company's Tariff I. C. C. 1476 (Exceptions to the Official Classification) took effect March 15, 1913. Supplements 6 and 7 are now in effect, and contain all changes.

* * *

Supplement 1 to P. R. R. SS. I. C. C. 1095, effective May 1, 1913, carries changes in rates on fertilizer and other commodities from points on Allegheny & Buffalo divisions of the P. R. R., to stations on the P. R. R.

* * *

Supplement 18 to Pittsburgh & Lake Erie Railroad Company's Tariff I. C. C. 1383 ("West Bound" Joint and Proportional Freight Tariff B-1250) will become effective April 1, 1913. This tariff carries Class Rates and Rate Bases in connection with commodity rates named in various tariffs, which make specific reference to this tariff, from stations on the Pittsburgh & Lake Erie and other carriers' points to various stations in Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, New York, Ohio, Pennsylvania, West Virginia and Wisconsin. Supplements 15, 16 and 18 contain all changes.

IMPORTS AND EXPORTS OF FERTILIZER MATERIALS

The following is the Government report of imports and exports of fertilizers for seven months ending January 1912 and 1913 :

IMPORTS OF MERCHANDISE

Articles and Countries	January—				Seven Months Ending January—			
	1912		1913		1912		1913	
	Quantities	Values	Quantities	Values	Quantities	Values	Quantities	Values
		Dollars		Dollars		Dollars		Dollars
Bones, hoofs, horns, unmanufactured...	....	197,704	....	71,382	....	669,833	....	480,905
Ammonia, sulphate of ....lbs.	19,289,216	520,760	19,009,131	601,962	115,900,816	3,238,447	87,076,530	2,623,457
Muriate of potash ....lbs.	59,093,017	897,338	49,894,172	678,808	291,541,837	4,322,325	280,864,056	4,097,186
Sulphate of potash ....lbs.	16,354,653	301,538	9,616,349	176,261	72,653,117	1,342,543	63,449,241	1,160,106
Nitrate of potash, crude....................lbs.	299,225	7,837	448,378	16,081	3,284,118	108,797	3,773,048	106,682
Nitrate of soda ....tons.	44,564	1,294,443	37,119	1,484,029	270,866	8,375,941	268,034	9,687,739
Sulphur or brimstone, crude ....tons.	2,082	34,536	1,898	46,016	15,430	273,164	16,635	325,706
Bone dust and bone ash ....tons.	3,319	82,900	2,612	66,987	21,137	512,095	20,673	512,712
Guano...tons.	5,594	95,383	3,444	54,765	32,769	634,138	15,073	245,267
Kainit ....tons.	93,550	416,524	72,003	327,601	352,226	1,756,564	357,541	1,653,642
Manure salts ....tons.	27,086	275,727	23,613	229,664	143,648	1,344,979	118,645	1,279,495
All other fertilizers	....	482,451	....	425,638	....	2,657,739	....	1,811,543
Sulphur ore with + 25% sulphur.....tons.	81,034	330,075	98,007	439,017	603,358	2,407,288	589,513	2,457,518

EXPORTS OF DOMESTIC MERCHANDISE

Sulphur or brimstone, crude...........tons	1,904	39,296	6,656	121,293	25,169	485,707	46,388	859,769
Phosphate rock, not acidulated :								
High-grade hard rock[1]....................tons	105,532	746,877	28,773	287,730	732,701	5,412,326	278,253	2,782,530
Land pebble[1]..................................tons			40,812	241,872			411,571	2,422,942
All other[1].......................................tons			108	325			601	3,426
All other fertilizers............................tons	4,905	162,547	4,680	150,387	27,301	856,787	38,100	993,648
Exported to—								
Belgium	10,457	75,255	5,825	36,020	64,994	442,077	62,543	424,620
France	9,200	65,300	9,900	71,400	77,218	465,640	70,906	448,682
Germany	19,282	164,872	10,018	85,180	166,981	1,518,062	193,665	1,736,125
Italy	5,250	37,500	6,600	45,600	55,100	374,800	49,342	307,480
Netherlands..	10,000	60,000	2,300	13,800	91,264	721,470	79,558	621,720
United Kingdom	12,207	85,072	11,131	85,394	100,825	745,707	125,022	891,684
Other Europe	17,100	128,600	18,640	162,400	84,193	597,360	92,185	706,286
Canada	2,585	72,050	1,796	19,402	11,836	214,201	16,543	218,370
West Indies and Bermuda	1,025	40,169	1,491	57,979	14,436	505,702	19,677	586,940
Japan..	22,402	140,702	5,695	61,000	90,736	585,183	15,998	143,976
Other countries	909	39,904	977	42,139	2,419	98,911	3,086	116,663
Cottonseed meal ....lbs.	192,713,906	2,599,875	163,097,479	2,174,264	830,858,989	11,116,425	705,705,137	9,469,512

EXPORTS OF FOREIGN MERCHANDISE

Ammonia, sulphate of..........................lbs.	....	....	....	....	....	....	222,885	7,233
Muriate of potash ....lbs.	....	....	1,031,570	16,289	414,280	8,646	3,416,400	56,256
Sulphate of potash.............................lbs.	2,000	55	50,000	1,053	73,000	1,814	700,800	15,824
Nitrate of potash, crude ....lbs.	....	....	38,272	1,770	94,088	4,353	173,557	6,704
Nitrate of soda...................................tons.	382	18,415	357	19,851	3,734	164,071	4,092	216,936
Sulphur or brimstone, crude...........tons.	....	....	7	150	....	....	1,008	20,179
Bone dust and bone ash ....tons.	....	....	....	....	5	117	....	....
Manure salts.......................................tons.	....	....	....	....	....	....	....	....
All other fertilizers	....	106	....	3,601	....	7,207	....	6,797

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[1] Not separately stated prior to July 1, 1912

TO INVESTIGATE EUROPEAN AGRICULTURAL SYSTEMS

President Wilson has appointed a commission of seven men prominent in the agricultural field to conduct in Europe an investigation of agricultural credit systems and co-operative organizations among the farmers of those countries.

The men appointed by President Wilson are: Senator Fletcher, of Florida, President of the Southern Commercial Congress; Senator Gore, of Oklahoma, Chairman of the Senate Agricultural Committee under the new Senate organization; Congressman Moss, of Indiana, Chairman of the Agricultural Appropriation Committee of the House; Dr. Clarence J. Owens, of Maryland, Managing Director of the Southern Commercial Congress, and formerly President of the Southeastern Agricultural College of Alabama; Kenyon L. Butterfield, of Massachusetts, President of Amherst College, and a leader in agricultural development work; Dr. John Lee Coulter, of Minnesota, the Government's expert on agricultural statistics, and Col. Harvie Jordan, of Georgia, President of the Southern Cotton Growers' Association, and former President of the National Farmers' Congress.

This commission will co-operate with the American Commission on co-operative credit, organized by the Southern Commercial Congress, which will visit Europe this spring. Both Houses of Congress have approved the efforts of the Southern Commercial Congress and the action of President Wilson recently in appointing Government Commissioners to co-operate with the Southern Commercial Congress's Commission is the first step giving the American Commission the status of a semi-official body. Upon its return from Europe the Commission is directed by Congress to submit a report on agricultural co-operation, particularly on co-operative credit systems. The Southern Commercial Congress now has all but twelve States, as well as four of the Canadian Provinces, represented on its Commission, so that it will be representative of the nation as well through the State Delegates as through the Federal Commissioners. The seven men appointed will represent the United States at the General Assembly of the International Institute of Agriculture at Rome, Italy, next May.

ORGANIZING NEW ALABAMA COMPANY

J. D. Mitchell, of Spring Valley, Ala., is reported to be organizing a company to establish a $50,000 cottonseed oil mill and fertilizer mixing plant at Florence, Ala.

ILLINOIS FERTILIZER COMPANY

The Illinois Fertilizer Company, East St. Louis, Ill., was incorporated in the office of Secretary of State, Springfield, Ill., on March 21st, with a capital stock of $50,000. The incorporators are: Walter N. Davis, F. J. Reppehnagen and H. W. Geller. Articles of incorporation state that the object of the company is to manufacture and deal in fertilizers.

TRANSFERRED TO DULUTH, MINN.

J. W. White, engineering salesman for The Jeffrey Manufacturing Company, Columbus, Ohio, located until recently at their Athens (Ohio) offices, has been transferred to Duluth, Minn. Mr. White will look after the sales work of the above company in the following territory: The eastern part of Minnesota, Northern Wisconsin and the entire Upper Peninsula of Michigan, with headquarters at 1905 East Superior Street, Duluth, Minn.

THE FRANKLIN FERTILIZER COMPANY

The Franklin Fertilizer Company, Franklin, Tenn., has been organized by J. E. Rodes, W. F. Eakin, T. P. Henderson and others. The company has been incorporated, with a capital stock of $10,000.

FACTORY WILL BE READY SOON

Machinery is rapidly being installed in the new E. E. Saunders Company's plant, at Pensacola, Fla., for the manufacture of fish scrap, oil and glue. The second shipment of machinery has already been put in place. The machinery used in the plant has been furnished by The American Process Company, New York City; Stoddard & Co., Gloucester, Mass., and Boomer & Boschert, of Syracuse, N. Y. It is expected that the plant will be in operation by the middle of April, and will be in charge of J. E. Calhoun, an expert from Gloucester, Mass.

WILL ENLARGE PLANT

The Williams Crusher and Pulverizer Company, St. Louis, Mo., has purchased a new site, and will enlarge their plant in order to properly care for their increasing trade in different kinds of fertilizer machinery.

NITRATE OF SODA INTO GERMANY

The imports of nitrate of soda into Germany from Chile, during 1912, aggregated 813,000 metric tons, at a value of $35,793,000, as against $32,182,000 worth of the same product in 1911.

A M!

"THAT MAN IS A BENEFACTOR TO HIS RACE WHO MAKES TWO BLADES OF GRASS GROW WHERE BUT ONE GREW BEFORE"

SUPPLEMENTAL BULLETIN
OF THE
AMERICAN
FERTILIZER

A MAGAZINE DEVOTED EXCLUSIVELY TO THE COMMERCIAL FERTILIZER INDUSTRY
AND ALL ITS ALLIED INDUSTRIES

Vol. XXXVIII PHILADELPHIA, APRIL 12, 1913 No. 7

A MESSAGE FROM DAYTON

Mr. W. T. Wuichet Briefly Describes the Situation, and Expresses Gratitude for the Kindness of Friends

DAYTON, OHIO, April 7, 1913.

EDITOR THE AMERICAN FERTILIZER.

DEAR SIR:—Your kind letter of March 29th just reached me today. I am going to take advantage of your thoughtful suggestion. I have received so many messages expressing sympathy and offers of assistance in the recent disaster here that it is impossible, under present confusing conditions, to write each one personally, much as I would like to; therefore, if it is not asking too much, I would ask you to do this through the medium of THE AMERICAN FERTILIZER.

Dropping 6 feet into a boat in the midst of rushing waters full of rubbish, and a ride of a quarter of a mile under such conditions, is an experience not soon to be forgotten.

Our home and its contents were practically destroyed, but we escaped out of the second story in boats, and I am glad to say we are all in good health again.

It was very fortunate the disaster happened just when it did, about daybreak, when families were all at home, especially the men folks. Had it been two hours earlier, or later, the loss of life would easily have reached 50,000. Fully four-fifths of the city was under water, the depth being from 15 to 25 feet, and the current at least 25 miles an hour. The tales of heroism and narrow escapes would fill a volume.

The flood was through the residential and business portions of the city; scarcely a merchant escaped total loss, and only a few of the manufacturers escaped damage.

Our plant, being in the outskirts, was not in direct line of the flood, and our damage was only from back water; otherwise we would have been swept off the earth. The water in our office, however, was over the desks, destroying all records and covering everything with mud. You can only imagine the situation.

While the loss has been severe, the many kind letters we have received not only take off the edge, but convince one that not only friends and communities, but even competitors in business, stand closer than one would suspect.

Mrs. Wuichet joins me in an expression of heartfelt gratitude to our friends in the fertilizer industry who have been so solicitous in our behalf.

Yours very truly,
WM. T. WUICHET.

THIS SUPPLEMENTAL BULLETIN TO THE AMERICAN FERTILIZER IS PUBLISHED EVERY OTHER WEEK AND ALTERNATES WITH THE REGULAR ISSUES OF THE MAGAZINE. IT BEARS THE DATE OF ISSUE, BUT HAS THE SAME NUMBER AS THE PRECEDING REGULAR ISSUE. IMMEDIATELY UPON THE RECEIPT OF THIS SUPPLEMENT IT SHOULD BE PLACED IN THE REGULAR ISSUE PRECEDING

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The Fertilizer Materials Market

NEW YORK

Brisk Demand for Small Lots of Materials. High Prices Being Secured for Prompt Sulphate of Ammonia. The Movement of Bones and Pyrites. Nitrate of Soda Active. The Cottonseed Meal Situation

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, April 10, 1913.

There is a good, brisk demand for small lots of fertilizer materials still reported in this market, but the source of inquiry is gradually shifting from the South to the North. The Southern season is now pretty well over, but a good inquiry for small lots is noted in certain localities. The Northern factories are now buying frequently if not heavily, and sellers who have desirable lots of materials at favorable shipping points are securing very high prices for them. The Northern buying will probably continue quite active for the next thirty days, and the industry will then settle into the usual period of lethargy noted during the warmer months. As far as affecting future market conditions the season is now over. Spot lots are commanding premiums, but for future delivery prices in every instance favor the buyer. The market for the week is easier, this, of course, referring to nearby deliveries and not for spot material.

Sulphate of Ammonia

It is quite difficult to write any extended review of this market at the present time. Dealers fortunate enough to have stocks available for prompt shipment have been securing very high prices, and we have learned of sales during the week of spot sulphate at Norfolk at 20 points above the figure prevailing for prompt shipment from Great Britain. Large quantities are going into the Atlantic ports from England and Scotland, but these represent for the most part deliveries against contracts closed earlier in the year. Arrivals at Norfolk have been very heavy, although Baltimore was a close second. Advices from Great Britain report a very quiet state of affairs there, with the market gradually adjusting itself to a lower and lower level.

Bones

Business in bones and bone meal has been rather good of late, although the demand, like other fertilizer materials, has generally been for small lots. Arrivals from abroad continue heavy, although the bulk of these probably represent deliveries against contracts closed earlier in the year. During the week imports of 1,375 bags of bones from Mexican ports, 2,350 bags of bone meal from Calcutta, 1,000 bags of bone meal from Hamburg, were noted at New York, and 2,250 tons of bones at Baltimore from Buenos Aires.

Pyrites

The movement in pyrites appears to be quite large and seemingly satisfactory, as reports from certain sections of the South indicate a rather brisk demand for ore in those localities. During the past week charters were reported here for three cargoes to Southern ports. As congestion is not reported at any port, these cargoes are going directly into consumption.

Meals

There is practically nothing doing in this market at the present time. Mowrah meal is the only item quoted, and consumers are showing very little interest in the product. Neither castor nor rape meal is being offered on a favorable enough basis to permit of liberal operation.

Calcium Cyanamid

Manufacturers report that, notwithstanding the lateness of the season and the unfavorable weather conditions of the past ten days, both powdered and granulated cyanamid have been in very fair demand. Inquiries and orders have been mostly for small "rush" shipments, which producers have been moving without delay. Several contracts for shipments extending over periods of from six to nine months were made recently. Because of the scarcity and high prices now being asked for second-hand muriate of potash bags, manufacturers of cyanamid have temporarily abandoned their use for new 11-oz. burlap bags, which are charged for at 8 cents each, non-returnable.

Nitrate of Lime

Agents of the Norwegian manufacturers report steady progress in the inquiry for nitrate of lime, and additional fertilizer manufacturers continue to show interest in the product. Their reports have been of a favorable character, and the importers look for a gradually expanding market in this country. Prices have not been subject to change for a long period.

Blood and Tankage

Both blood and tankage are quite firm in this market at the present moment, and some business has been done at rather high prices. The movement is restricted, however, to a narrow territory, as freight competition with outside points precludes competition with the large slaughtering points.

Fish Scrap

The herring fishing in the Chesapeake has hardly more than started, and it is, of course, much too early to secure any idea of the approximate yield of scrap and oil. In the meanwhile the market is "marking time," as no scrap was carried over from last season. There is now a practical suspension of business in foreign fish manures, as buyers apparently are awaiting the outcome of the first make of menhaden scrap. Dealers are quoting prices on scrap for future delivery, but the figures are merely nominal, as it is impossible to learn of any actual business contracted.

Nitrate of Soda

A moderate degree of activity was noted in the local nitrate of soda market during the past week, and both the Northern and Southern fertilizer factories were buyers of small lots for rush shipment. Importers are rather stiff in their views on nitrate for spot delivery, but for futures prices can be shaded considerably. The following statistics are of interest:

	1913 Tons	1912 Tons
Estimated March shipments to U. S.	59,360	49,760
Estimated March shipm'ts to Europe.	115,290	162,570
European deliveries March 1/15...	187,000	238,000
Estimated loading at March 15 for April despatch to Europe........	38,130	41,200
Estimated visible supply for Europe at March 15	843,500	798,000

COTTONSEED OIL AND MEAL

New York, April 10, 1913.

A highly speculative and irregular cotton oil market prevailed here during the past week, and the uncertainty resulted in restricted buying by consuming interests. Lard compound and oleomargarine makers have been buying for their actual needs only, and these small lots have been withdrawn from the market without creating any special influence one way or the other. Prices have advanced moderately, nearby positions showing the most pronounced strength. Spot oil is some 10 points higher for the week. The far distant positions are a trifle easier for the week.

The crude oil situation underwent comparatively little change during the week, although prices are nominally higher. No change has taken place in crude oil offerings, and the market has every indication of being sold out. Sales in the Carolinas, Georgia and Alabama have taken place at higher figures. In the Mississippi Valley the scarcity of offerings has been even more pronounced, and dealers have been holding out for very high prices. No trading of consequence had taken place, and it is the general opinion that the output has been disposed of. In the Texas territory several tanks were sold at slightly lower prices than prevail at other points. It is believed that more oil is held in the Texas section than anywhere else. According to authoritative estimates supplies at present are between 150,000 and 175,000 barrels. This oil is apparently well scattered, and in looking over the situation there is more disposition to underestimate visible stocks than to overestimate them. The relatively low supplies of crude oil do not necessarily forecast a scarcity of refined oil, as the three large companies refining oil are believed to have enough stock under control to meet any inquiry which may develop during the remainder of the season.

As a confirmation of the speculative nature of the market during the week, it is but necessary to point out that lard declined and oil advanced. Underlying conditions would therefore not ordinarily warrant an advance, and in face of higher prices it seems but natural to expect a restricted consuming movement. Selling today towards the close of the market was heavy, and the well-posted members of the trade are of the opinion that prices are to go lower, and conditions will probably, they contend, favor the buyer during the summer months. The market, however, is such a highly speculative one that a heavy close may be followed by a sharp advance at the opening the next day.

The Census Bureau estimates the 1912 crop crush will be 4,541,000 tons of seed. A ton of seed generally produces 40 gallons of crude oil. The crude oil production will therefore be 181,640,000 gallons, or 3,632,900 barrels, figured at 50 gallons to the barrel. The refining loss this year is estimated at 10 per cent., so that the refined oil output should be 3,269,520 barrels. As some 350,000 barrels were carried over from last year, the total visible supply will be 3,619,520 barrels. Last year the production was 3,620,000 barrels.

GLUES

The feature of the week was, of course, the question of the new tariff. The proposed schedule calls for a substantial reduction in duties. Glue valued not above 10 cents per pound is to pay a duty of 1 cent per pound as against 2½ cents now; glue valued above 10 cents and not above 35 cents is to pay 15 per cent., as against 25 per cent. at present. The lower duties if enforced will in all likelihood result in the larger importation of foreign glues, but as far as can be learned in the local trade the foreign manufacturers are not very gleeful over the change, as they now contend or pretend to contend that they are not in a position to offer in a heavy way for the American market. The Austro-Hungarian-German glue combine have had a great deal of difficulty in securing a supply of raw bones of late, and as a consequence state that their offers of glue will have to be restricted. The reduction, it is perhaps needless to state, is one that the Americans do not particularly relish, but one for which they will now have to make provisions.

MISCELLANEOUS PACKING HOUSE PRODUCTS

Like cottonseed oil, the general provision market has been irregular and of a speculative nature during the past week. The Census Bureau report issued today gave the loss of swine for the year ending April 1st as 110.1 per thousand, as against 54.9, the average per thousand for the last ten years. Hog cholera caused 90 per cent. of the loss. The lard compound market has advanced, and has been quite active during the week. Six cars of oleo stearine were sold during the week at an unchanged price. Tallow is higher locally, and at the London auctions advances of 3d to 6d were recorded. Grease is unchanged, and supplies small. The market is in position to respond to any active consuming demand. High-grade soap oils advanced locally, with more activity noted.

BALTIMORE

The Volume of Business in Mixed Goods Most Satisfactory. Acid Phosphate Will Be Well Cleaned Up.

Exclusive Correspondence to "The American Fertilizer."

BALTIMORE, April 9, 1913.

Reports from the local fertilizer manufacturers indicate that the volume of business still keeps up at a most satisfactory rate. All the factories are being pushed to their utmost capacity.

Animal Ammoniates.—Due to the fact that the local manufacturers entered upon the present shipping season with ample supplies of crude materials, the demand here has not reached unusual proportions. There is a good market for offerings that come within the range of buyers' views, but the stocks have not been depleted to the point that buyers are in urgent need of them. The Western market continues to be strongly held for prompt and nearby, and producers claim to be well sold up. On futures all producers are more or less bullish in their views, but at this time buyers are not showing very much interest.

Acid Phosphate.—There have been some orders in a wholesale way in this market the past week, but, while in all probability so far as stocks are concerned the local manufacturers are in position to take such orders, the pressure to get at their bagged goods has weakened their interest somewhat in this class of business; in fact, if the orders continue as they have been, it is not improbable that stocks of this material will be pretty well cleaned up.

Nitrate of Soda.—The market continues strong for spot and near futures. While prices have not been advanced, they are firmly held at the previous figures. Long futures show up somewhat lower, but buyers are not showing very much interest at this time.

Sulphate of Ammonia.—There is a good demand for spot, and prices are strong, with very little surplus stock. For near futures prices are on a much lower basis than for spot, and for long futures considerably lower prices are being asked.

Bone.—There is a fair spot demand, but very little stock to take care of it. Futures are being quoted on a somewhat lower basis than heretofore prevailing.

Potash Salts.—There is a fairly active demand for spot delivery, with stock not overly plentiful. On such inquiries prices have improved somewhat.

CINCINNATI

The General Market Very Quiet on Account of Flood Conditions in Ohio and Indiana

Exclusive Correspondence to "The American Fertilizer."

CINCINNATI, April 8, 1913.

The general market in the Middle West is very quiet, and the fertilizer manufacturers are very pessimistic as to the outlook for the spring trade. Railroad connections with Indiana and Ohio will probably not be handling freight for ten days or two weeks, and many are estimating that but 50 per cent. of the anticipated spring business will be realized, as the flood conditions have been felt equally by the consumer and the producer.

Tankage and Blood.—The market is fairly active for points South, with prices firm.

Sulphate of Ammonia.—The market remains firm, but little inquiry for same in this section.

Nitrate of Soda.—Spot and nearby deliveries are firm, but the high prices being asked are taking away the interest from this commodity.

Bone.—Little trading is being done, and the prices are ruling slightly easier in consequence.

Cyanamid.—This material is in good demand, and several large sales have been reported for prompt and future deliveries, with prices firm.

PHILADELPHIA

The Tonnage in Mixed Goods Beyond Expectations. Factories Working Overtime to Fill Orders

Exclusive Correspondence to "The American Fertilizer."

PHILADELPHIA, April 10, 1913.

A canvass of the trade shows marked activity in the work of getting out shipments to the consuming end of the business; all manufacturers are rushed in this respect, some reporting day and night work in effort to catch up with their shipping orders. For this reason no attention is given to the materials market beyond actual needs of the moment, in order to overcome unprepared conditions for orders amounting to a tonnage quite beyond anticipations.

We understand potash salts and nitrate of soda have received the bulk of attention during the past week, although tankage and sulphate of ammonia have also been reported as changing hands. So far as we can learn, however, the business has developed no change of prices and the materials market continues on a normal basis.

SAVANNAH

Somewhat Increased Demand for Ground Blood. Manufacturers Are Doing More Business Than Expected

Exclusive Correspondence to "The American Fertilizer."

SAVANNAH, April 8, 1913.

Nitrate of Soda.—The market shows no decline, with practically no spot offerings.

Ground Blood.—The market remains unchanged, with somewhat of an increase in demand during the past week. This also applies to tankage.

Cottonseed Meal.—The local market remains unchanged, and interior offerings are at highest figures. There is only a small amount being offered, and the business is practically over.

Fish Guano.—There are only a few odd lots offering, with nothing coming in for delivery during the next thirty days, and prices are at the highest of the season.

Ammoniates.—There is considerable demand for ammoniates of better grades, as manufacturers are doing more business than expected.

ATLANTA

The Materials Movement Nearly Over. Still a Good Business in Rush Orders. Blood and Tankage Strong and Scarce

Exclusive Correspondence to "The American Fertilizer."

ATLANTA, April 7, 1913.

The movement of materials to this territory is now practically over, particularly the Southern portion, though a few small sales are being made for late filling in orders. The season being somewhat later in the territory farther North, quite a good business is still coming in in the way of rush orders for small lots.

Blood and Tankage movements have been badly delayed on account of the Ohio River floods, and quite a lot of this material has been cancelled and cottonseed meal or other available ammoniates been substituted. Spot stocks in this line have been at a premium, and the market is now bare. However, indications are that some little quantity of these goods will yet be required to wind up the season.

Nitrate of Soda.—There has been no change in the market. The demand for spot goods seems to have fallen off somewhat, practically everybody having supplied their immediate wants.

Cottonseed Meal has been practically cleaned off the market, there being very little offered, and, in fact, at the moment only a very light demand.

Sulphate of Ammonia.—Very little demand; no domestic offerings, and only very light imports.

Fish Scrap.—Season over; no offerings; no demand.

Cyanamid.—Fair demand; some sales reported.

Acid Phosphate.—Practically no activity in this line noted.

Phosphate Rock.—No interest being taken in purchase of this material so far.

Potash Goods.—Fair movement, on contracts principally. Very few new sales.

Pyrites Ore.—Market dull just at the moment, but fair indications of a good business the coming season.

TENNESSEE

Reports from Manufacturers Very Satisfactory and Encouraging. Steady Demand for Complete Goods

Exclusive Correspondence to "The American Fertilizer."

MT. PLEASANT, April 7, 1913.

The fertilizer market remains about as last reported. The reports from various local manufacturers are very satisfactory and encouraging. Inquiries continue very good indeed. A steady demand for a complete goods has been noticeable. The local concerns are kept busy filling rush orders.

Sulphate of Ammonia, so far as we can learn, has had very little attention. Only a few orders have been filled since last reported.

Nitrate of Soda has advanced but very little in prices. The market remains firm however, with the advanced prices.

Acid Phosphate.—There are no changes in the general market to be reported. Prices remain the same. Local concerns claim that if the present trade continues there will be enough stock on hand to supply the demand.

Phosphate Rock.—Some few local manufacturers are buying small quantities. Most of the shipping of hard rock from the phosphate fields at this place is now going to Northern States. Prices are the same as last reported.

CHICAGO

Western Ammoniates Continue to Advance. Nearly All Sellers Closely Sold Up on Ground Blood and Tankage

Exclusive Correspondence to "The American Fertilizer."

CHICAGO, April 8, 1913.

The market for Western ammoniates has continued to advance, and the transactions have been made this week at from five cents to ten cents per unit above the quotations of a week ago.

Practically all of the sellers are closely sold out on ground dry blood, and only one of the large packers is in a position to supply more than a very limited amount for prompt shipment. Nearly all of the packers are also quite closely sold out on dry ground high-grade tankage, and none of them can make shipment inside of a week, and only two of them can make shipment inside of ten days to two weeks.

There is not much business in concentrated tankage or hoof meal, but there is a good demand for tankage running from 8 to 9 per cent. ammonia, and this grade has advanced five cents per unit in the past few days. There is also a demand for tankage running 6 per cent. ammonia and 30 to 35 per cent. bone phosphate, and shipments of this grade have been very heavy.

Offerings of bone continue to run large, and there is very little demand at present.

CHARLESTON

Continued Activity in the Market. The Season Drawing to an End. Carried Over Stocks Well Cleaned Up

Exclusive Correspondence to "The American Fertilizer."

CHARLESTON, April 8, 1913.

The fertilizer market at this port continues active. Some resales are noted, and a number of small orders of various kinds have been reported. The shipping of manipulated fertilizers is rapidly drawing to an end, and it is doubtful if the market will continue active for a much longer period except in the sale of top dressers and similar goods.

Some orders are being placed for early fall delivery, and it is probable that a good business will be done for such deliveries, as most of the companies have cleaned up all stocks carried over from last year.

Nitrate of Soda.—The market continues strong for spot and near futures. The high price of nitrate of soda is forcing a number of buyers who are predisposed towards it to buy other materials which are less expensive.

Western High-grade Ground Blood.—The demand at this port continues about as previously reported. The local manufacturers started the season well supplied with ammoniates, and are only buying small lots to carry them through the season.

Western High-grade Tankage.—The market continues to be about as reported, and the demand continues good.

Acid Phosphate.—The market for wholesale quantities is very dull; plentiful supply on hand, with light demand.

Sulphate of Ammonia is scarce. Spot goods pretty well shipped out; stocks very light.

Cottonseed Meal.—The demand is very light.

Phosphate Rock.—The market here is about as previously reported, and little interest is being shown in rock at this time.

Pyrites Ores.—The usual demand at prevailing prices.

Potash Salts.—The demand about nominal under the prevailing syndicate prices.

NITRATE OF SODA

An Active and Firm Market. A Limited Quantity of Spot Material. Importations for March

Exclusive Correspondence to "The American Fertilizer."

SAVANNAH, April 8, 1913.

The market has been extremely active during the past two weeks, with practically all spot offerings taken promptly.

As intimated last January, boats are only bringing in small quantities over deliveries which have to be made covering future purchases, therefore leaving only a relatively small amount of spot from each vessel.

Three boats have been at South Atlantic ports during March, and have nothing left; but a boat is due in Savannah on the 12th of this month on which there is about 500 tons unsold, and this will probably be taken before arrival of vessel.

Importations in United States for March were about 60,000 tons, against 20,000 tons last year. Europe shows an increase in March, and the market there is firm, as it is in the States.

The future market in nitrate is well defined at this time, owing to commitments that have been made covering September, 1913, through June, 1914. Present indications are that freight rates for next season will be higher than the average prevailing during the 1912-1913 season.

FERTILIZER AGENCIES CO.

MATERIALS IMPORTS AT NEW YORK

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, April 10, 1913.

The following imports were noted at this port during the past week:

Fertilizer, n. e. s.—25 bags, "Minnetonka," London; 25 pkgs., "Minnetonka," London; 770 bags, "Manhattan," Antwerp; 1,175 bags, "President Grant," Hamburg.

Bones.—1,005 bags, "Esperanzo," Vera Cruz; 370 bags, "Guantnamo," Tampico.

Bone Meal.—2,350 bags, "Suveric," Calcutta; 1,000 bags, "Inkula," Hamburg.

Kainit.—150 tons, "Inkula," Hamburg.

Manure Salts.—30 tons, "Pr. Fried. Wilhelm," Bremen; 50 tons, "Inkula," Hamburg.

Phosphate.—1,620 tons, "Manhattan," Antwerp.

Potash Muriate.—6,160 bags, "President Grant," Hamburg; 1,680 bags, "Pr. Friedrich Wilhelm," Bremen; 4,480 bags, "Inkula," Hamburg.

Potash Sulphate.—560 bags, "Inkula," Hamburg.

CHARTERING

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, April 10, 1913.

The following fertilizer-carrying vessels were contracted for in the local market during the past week:

Fertilizer.—Schooner "Sallie C. Marnce," 545 tons, from Venezuela to Jacksonville, private terms; Norwegian steamer "Edda," 970 tons from Baltimore to Windsor, N. S., private terms, prompt.

Phosphate Rock.—Schooner "Horace A. Stone," 1,235 tons, from Port Tampa to Baltimore, private terms; Schooner "Alice May Davenport," 950 tons, from Baltimore, private terms.

Pyrites.—British steamer "Jupiter," 1,365 tons, from Huelva to Port Inglis, 8s 10½d, prompt; Dutch steamer "Maria," 2,370 tons, from Huelva to North of Hatteras, 8s 9d, prompt; Spanish steamer "Adolfo," 2,190 tons, from Huelva to Wilmington, N. C., 8s 9d, prompt.

CHANGE OF ADDRESS

The Buffalo, N. Y., offices of the American Cyanamid Company have been changed from 910 Ellicott Square to 528 Ellicott Square, Buffalo, N. Y.

FACTORY NOT DAMAGED

Zanesville, Ohio, April 3, 1913.

Editor The American Fertilizer.

Dear Sirs:—We are just in receipt of your favor of the 29th ult., and, replying to same, wish to state that our fertilizer works are situated about three miles from the river, and were not damaged at all by the recent flood.

Our office, however, which is situated in the city, was completely flooded, and we are therefore compelled to use this stationery, which kindly excuse.

The railroads have been so badly damaged that they were compelled to abandon all freight for the present, and as soon as they resume freight service we are ready to serve our customers.

Yours very truly,
L. Frank & Sons.

PLANT DID NOT SUFFER

Washington C. H., Ohio, April 3, 1913.

Editor The American Fertilizer.

Dear Sirs:—Replying to your favor of March 29th, just to hand, wish to advise that our plant did not suffer any damage from the recent floods. The only loss incurred is from cars which happened to get into flood districts, being perhaps ten or twelve cars.

Thanking you for the courtesy of your letter, we are

Yours very truly,
The M. Hamm Company.

SHIPMENTS INCREASE FIFTEEN PER CENT.

Officials in the transportation departments of the railroads radiating out of Macon, Ga., state that the fertilizer shipments from that territory have been greater this season than last year. The increase will be about 15 per cent. according to their estimates. This increase is accountable to a great degree to the education of the farmers and planters in general that has been done by the various institutions, among which has been the State College and Bibb County Agricultural Institute.

INTERSTATE COTTONSEED CRUSHERS' CONVENTION

The 17th annual convention of the Interstate Cottonseed Crushers' Association will be held in Chicago, Ill., on June 9, 10 and 11. Plans are now being formulated for interesting business sessions, and an elaborate program of entertainment.

ADDRESSES WISCONSIN AGRICULTURISTS

Prof. Henry G. Bell, Agronomist of the Middle West Soil Improvement Committee of the National Fertilizer Association, addressed the Waukesha County Branch of the Wisconsin Agricultural Experiment Station, which held its annual meeting on Saturday afternoon, March 29th, at Waukesha, Wis. Prof. Bell's subject was "Agricultural Economics of Waukesha County." He explained the importance of fertilizing the soil for larger and more profitable crops.

STATE LIME PLANT PLANS SUSPENDED

In the April 5th issue of The American Fertilizer we published an item to the effect that the Commonwealth of Virginia would establish State lime grinding plants for the employment of convict labor. The constitutionality of the statute was upheld in the Circuit Court, but the lime manufacturers appealed to the State Supreme Court of Appeals, and have been granted a writ of error.

This means that the appeal will take its place on the docket of the higher court for the argument on its merits at the June term, and in the meantime the writ acts as a temporary injunction against the establishment by the State of the proposed prison operated lime grinding plants.

REMOVED TO LARGER QUARTERS

Chas. F. Garrigues & Co., formerly of 56 Pine Street, New York City, and well known in the trade as brokers and dealers in nitrate of soda and other fertilizer materials, have removed to larger quarters in the recently erected building at 80 Maiden Lane, New York City. The Cedar Street entrance to the building they formerly occupied is directly opposite the Cedar Street entrance to the Maiden Lane building so that visitors to their offices will experience little difficulty in locating them in their new quarters.

LARGE HERRING CATCHES

It is said that large catches of herring are being made by the traps in the mouth of the Potomac River, which would indicate that the prospects are for a good herring season.

WILL ESTABLISH SCRAP PLANT

The Consolidated Fish Weir Company, of Provincetown, Mass., is considering the establishment of a plant there to care for the refuse and unmarketable fish which are taken and hitherto have been thrown away.